

A POPULAR ENCYCLOPEDIA OF HEALTH



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A POPULAR ENCYCLOPEDIA OF HEALTH

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But these physicians, my son, of whom thou speakest are like menders of torn garments, and thus, they cure those who have fallen sick. Thy chief anxiety should be to provide for health, for thou oughtest to take care to prevent thy army from falling into sickness at all.

Advice of the father of Cyrus the Great to his son.
(About 550 B.C.)

PREFACE

This volume is, so far as the authors know, a first attempt at the preparation of a popular Encyclopedia of Health for home use. It aims to fill the gap in health literature between technical text-books, and the popular health contributions in magazine and press. It offers scientific information in simple language and in convenient reference form. Controversial subjects are largely avoided. The book aims to present simple facts of health, rather than medical treatment. An attempt has been made to include such material as will help the average individual to live sanely, to bring up his family intelligently from the point of view of health, to avoid spreading disease in his community and to know when to consult a physician.

Acknowledgment is made to the many authors whose works have been found of material value in the compilation of this Encyclopedia of Health, and to whose writings numerous references are found throughout the text. The authors also are deeply indebted to a group of health and medical leaders who have been kind enough to review and criticize portions of the text.

TO THOSE WHO USE THIS BOOK

The old-time family medical book was kept on the kitchen shelf and thumbed for advice in times of need. The authors of this Encyclopedia of Health hope that it will be kept in an equally convenient place and thumbed as frequently. It is intended to help the average individual to answer certain important questions. How can I keep well? How can I keep my family well? It aims to help in meeting the various health emergencies that arise from time to time in all homes. Unlike the "doctor book" of yesterday, this book tells the reader not only what to do when he is sick, and when the doctor is needed, but also how to live so as to avoid preventable illness. The emphasis is on the conservation of health and on preventive measures. In the discussions of disorders and diseases, the authors have intentionally avoided prescribing medical treatment and have discouraged self-diagnosis. Their aim is to enable the reader to understand the seriousness of given disorders and to know when he should consult a physician.

The book differs from books and pamphlets on health previously published in being primarily a home reference book rather than a text-book or a book for general reading. It aims to be simple in style, free from confusing detail or technical terms, and at the same time to offer the results of the latest scientific research on health subjects.

The topics are arranged alphabetically and cover a broad range of subjects. They deal with personal hygiene—bath-

ing, care of eyes, care of teeth, diet, etc.; with the care and management of the home; with problems of community sanitation—garbage, sewage, milk, water supply, etc.; with the home care of the sick; with industrial conditions that threaten health; with special health problems, such as prenatal care and care of babies; with school health; with first aid measures for common emergencies, and with official and private health agencies. The common preventable and communicable diseases are described briefly. In addition to physical disorders, some of the more common defects of nerves and mind are included, with common sense rules for following mental habits that lead to mental health. Special effort has been made also to treat the problems of those who live in the country and in small towns, as well as the problems of city dwellers.

The following sections contain information that should be of interest to every one who uses this book. The authors recommend for general reading: Bathing, Camps, Climate and Health, Clinics and Dispensaries, Clothing, Diet, Exercise, Fallen Arches, Fatigue, Flies, Garbage, Germ Theory, Health Officers, Heredity, Infant Mortality, Lengthening Life and Enriching Life, Medical Examination, Milk, Narcotic Drugs, Patent Medicines and Advertised Cures, Posture, Recreation, Sleep, Teeth, Vacations, Ventilation and Water.

Sections of special interest to parents and teachers are: Adenoids, Infant Mortality, Infants (Care of), Malnutrition, Mental Habits of Children, Open Air Schools, Playgrounds, School Clinics, School Health Examinations, School Lunches, School Nurses, School Sanitation and Ventilation. The housewife will find information to help her in keeping her family well under the sections: Calories, Home Hygiene,

Home Nursing, Housing, Marketing for Safe Food, Sunlight, Ventilation, Vermin and Water.

A typical circumstance that this book is intended to meet may be illustrated by the instance of a mother whose eight-year-old boy comes home from school with a report from the school doctor that the child is suffering from malnutrition. The mother turns to *Malnutrition*. She checks up his weight with the weight for height table and finds perhaps that he is ten pounds underweight. She reads the advice given and may decide that Johnny is not getting milk enough to drink or enough sleep or that he needs a general examination by a physician. At the end of the article on *Malnutrition* she is told to see *Calories*, *Diet*, *Sleep* and *School Lunches*. Under *Diet* she finds information about food values and some common mistakes in eating, with tables that will help her plan well-balanced meals. The table included in the discussion of *Sleep* shows the number of hours of sleep a child should have according to his age. She may discover the reason for Johnny's condition under *School Lunches*.

Another mother has occasion to turn to this book when her child cuts an artery in his arm, and is told under *Bleeding* how to make a tourniquet in order to stop bleeding while waiting for the physician. Or she may wish to inform herself in preparation for a general discussion of foods and diet at a Parent-Teacher Association meeting. She turns to *Food* and is referred to *Diet* and *Marketing for Safe Food*. Under these subjects she finds information that equips her to discuss calories, the different groups of foods, meal planning, some of the precautions necessary in buying foods and the ways the consumer is protected by State and Federal laws. References to books on food enable her to

go further into the subject if she needs more detailed information.

Again, a usual listener-in was unable to hear the regular radio health talk, this time on Cancer. What were these new "cures" reported? What had doctors said in the paper recently about the X-ray? What is the "last word" from responsible sources of information on the prevention and cure of cancer? The Encyclopedia of Health endeavors to meet these inquiries.

It is unnecessary to attempt listing all the occasions on which it is hoped this book will prove useful. Its scope will be tested through the problems that arise from day to day in homes, and by the aid it offers in solving them. Its value will be proven by the service it can render in diminishing the numbers of those who suffer unnecessarily from ill health, due to not knowing how to live.

The book presents a wealth of information which the authors have found valuable in reducing sickness and death rates among the millions of policyholders of the Metropolitan Life Insurance Company, working in co-operation with physicians and health authorities everywhere.

A POPULAR ENCYCLOPEDIA OF HEALTH

ACCIDENTS

Though accidents do "happen in the best-regulated families," the well-regulated family can and will see that accidents are of rare occurrence.

Injuries due to violence to the skin, bones or blood vessels are for the most part preventable, especially those which occur in the home. Falls are the most common cause of broken bones; there should be few of them if the house is well ordered, with everything in its place. Repair insecure stairs; protect children by having guards outside high windows and gates on stairways; test ladders before using them; don't use boxes, tables, or rocking chairs for ladders; sprinkle sand or ashes on icy walks and steps. Dangerous wounds may be caused by boards left lying about with the nails sticking upward, by tacks and pieces of glass and by the sharp edges of tin cans. Such injuries are more likely to become infected than is a clean cut.

Many home injuries are caused by fire or boiling water. Children should not be allowed to play with matches, to carry lighted lamps or to take pots or pans containing boiling water from the stove. Cleaning with gasoline or benzene in the presence of a light or fire has caused many explosions and fires. Gasoline and benzene should be used only out

2 A POPULAR ENCYCLOPEDIA OF HEALTH

of doors or in a room that has no fire, no heater and no lighted lamp or candle in it.

In case a fire starts in a room, close all doors and windows to prevent a draft and give the alarm promptly. A few pails of water thrown on at first may do more good than thousands of gallons later. A blaze may often be smothered with a rug or blanket.

When a person's clothes catch fire, he should not run for help, as running fans the flames and causes them to rise toward the face. Rolling on the floor or, better, wrapping oneself tightly in a heavy rug or a wool coat will smother flames.

In 1924 5,700 children were killed by automobiles. This slaughter can be reduced if parents will train their children to be cautious. They should never be allowed to play in the road or on a street unless it is closed to traffic. They should be taught to look in both directions before crossing the street, not to run out in front of a moving vehicle to pick up a ball or other plaything and not to jaywalk.

FIRST AID OUTFIT.—Every family medicine chest should contain certain first aid materials and medicines, carefully selected and carefully labelled. The following articles should always be on hand:

Sterilized gauze bandages to hold dressings in place. A packet of individual first aid dressings, including small compresses with bandages attached, will be found very useful.

Alcohol—(For rubbing), six ounces. Use externally to relieve the pain of sprains, strains, bruises, and to refresh the skin during an illness.

Aromatic Spirits of Ammonia—Two ounces. One-half teaspoonful in some water for faintness.

Boracic Acid—Four ounces. Dissolve in water and use as an eye wash.

Carbolated Vaseline—One tube. For external use, in treatment of burns.

Castor Oil—Eight ounces. Dose—One to two table-spoonfuls.

Oil of Cloves—For toothache.

Tincture of Iodine— $3\frac{1}{2}$ per cent. For wounds.

Syrup of Ipecac—Dose, one teaspoonful, followed by a drink of warm water, to cause vomiting.

Strong Poisons—Certain antiseptics, such as bichloride of mercury tablets and carbolic acid, should have a very doubtful place in the family medicine closet. Less dangerous antiseptics, such as some of the commercial preparations of Dakin's solution, which are obtainable at drug stores, are actually better for most practical purposes. Tincture of iodine is a good disinfectant for small wounds, but must be handled with care.

Bichloride of mercury tablets swallowed by mistake cause numerous deaths every year. Carbolic acid is not only a chemical caustic when applied in concentrated form, but even in weak solution is a destructive and dangerous commodity. If carbolic acid is accidentally spilled upon the skin, alcohol applied at once is a chemical antidote.

Another menace to the lives of children is lye, used in so many kitchens to clean the sink. This powerful chemical should not be left about in a household where there is a small child. Every year a considerable number of children swallow this caustic, which severely burns and sometimes closes off the gullet, so that an artificial opening may have to be made in the stomach for feeding.

It is exceedingly dangerous to leave medicines lying about

4 A POPULAR ENCYCLOPEDIA OF HEALTH

where children can reach them. A medicine chest that will lock is the only safe place for any kind of drug.

In all cases of serious accident, call a physician at once.

HOW TO TREAT EMERGENCIES UNTIL THE PHYSICIAN COMES: When suddenly called upon to take charge of a seriously injured person, keep calm. Examine the patient with the following questions in mind:

Is the patient breathing? If not, all other considerations must be disregarded until breathing is brought back. (See *Artificial Respiration*.)

Is he bleeding dangerously? If so the hemorrhage must be stopped before other treatment is given or the patient may bleed to death. (See *Bleeding*.)

Is he in a place in which his life is still being endangered? In such a case, he must be moved. Otherwise it is best not to move him until the physician arrives.

In order to make an examination, it may be necessary to remove clothing. Cut this off where necessary. Do not let the skin get chilled.

Most serious accidents, and many trivial ones, are accompanied by some degree of "surgical shock." It is due to depression of the nervous system, which results directly in failure of the blood vessels to maintain proper distribution of the blood supply.

The signs of shock are:

- (a) Skin pale, lips and nails blue.
- (b) Body cold and moist.
- (c) Pulse weak and rapid.
- (d) Patient in stupor and possibly unconscious.
- (e) Possibly vomiting or hiccoughs.

Unless there is serious bleeding, shock should be treated before anything else is done to care for an injury. The person in attendance should avoid talking about the accident and, if possible, prevent the injured person from looking at his wound.

The injured person should lie flat upon his back with the head somewhat lower than the body, if possible. Keep him as warm as possible, using blankets or heavy clothing, and place hot water bottles or hot bricks or stones near the patient, being very sure that there is no possibility of burning the skin. Under the covers, the legs and arms may be massaged, rubbing toward the body.

Recovery may be stimulated by permitting the patient to inhale aromatic spirits of ammonia, or, when he is able to swallow, by administering a half teaspoonful of aromatic spirits of ammonia in hot water, or by such drinks as hot tea, coffee, milk or broth.

ADENOIDS

Adenoids are sponge-like growths that sometimes form in the back of the throat just where the nose and throat join. They cannot, however, be seen without the aid of special instruments. Adenoids are most common among children between the ages of eight and twelve. However, older people and even nursing babies may suffer from them.

Adenoids block the air passages, so that breathing through the nose is difficult and frequently impossible. A child who has extensive adenoid growths breathes constantly through his mouth, snores in his sleep and usually has frequent colds or a continuous nasal catarrh. If the condition is neglected, it may lead to serious ear trouble and deafness. The soft spongy tissue sometimes forms a breeding ground for germs.

6 A POPULAR ENCYCLOPEDIA OF HEALTH

Hence a child who has adenoids is more likely to contract certain of the diseases of childhood. His growth may also be affected, and he may be backward and dull in school because of this physical handicap.

A child who goes about with his mouth open and breathes constantly through his mouth should be taken to a doctor promptly. Earache or a prolonged cold are other signals that should be heeded at once.

No child need suffer from adenoids, since the removal of these growths is a very simple surgical procedure. The sooner the growth is discovered and removed the better for the health of the child. Nearly every town of any size has a hospital or clinic in which proper surgical treatment can be obtained. (See *Colds* and *Ear, The.*)

ADRENALIN

(See *Asthma.*)

AIR

(See *Ventilation.*)

AIR-BATHS

(See *Sunlight.*)

ALCOHOLISM

Alcoholism is alcohol poisoning and is caused by excessive use of alcoholic drinks. It may be chronic or accute. In chronic alcoholism the organs of the body become diseased and weakened owing to long-continued slow poisoning. Delirium tremens is one of the most violent symptoms.

Certain diseases of the heart, liver, kidneys and digestive tract are brought on or made worse by alcoholism. A large

percentage of cases of insanity are due to alcoholism. Experiments have been made on animals to determine whether the ill effects can be passed on by parents to their children. According to Rosenau * these experiments give various results, but indicate lowered vitality in the offspring.

Particularly severe cases of alcoholic poisoning have occurred during the last few years owing to the sale of drinks made of wood alcohol and impure forms of alcohol. Many cases have resulted in death and many in blindness.

Recent studies indicate that the continuous use of even mild alcoholic drinks may slow down mental processes and probably weaken the resistance of the body to infectious diseases.

AMNESIA

Every now and then one reads in the newspaper of someone being found wandering about unable to tell who he is or where he comes from. He is in a state of amnesia, as it is called. Common causes of this condition are apoplexy, mental strain, sudden shock and insanity.

Cure is often brought about by rest and by expert treatment by a physician. Sometimes memory comes back gradually, and at other times it is brought back suddenly by some occurrence that reminds the patient forcibly of the past.

ANEMIA

When a person is habitually pale and listless, he is frequently found to be suffering from anemia. That is, his blood is deficient in quantity or quality. He may have lost a large amount of blood through bleeding, or his blood may

* "Preventive Medicine and Hygiene," by Milton J. Rosenau.

not contain sufficient red cells, or again there may not be enough of an important substance, called hemoglobin, in these cells. This condition is likely to interfere seriously with health, since it is the business of the red blood cells to carry oxygen from the lungs to the tissues. Decrease in red cells or amount of hemoglobin may be due to the effect of a disease, such as tuberculosis, cancer, or malaria, to lead poisoning or to chronic disturbances of the stomach and intestines.

People frequently diagnose themselves as anemic and prescribe for themselves iron tonics purchased at drug stores without the advice of a physician. This practice is unwise, for three reasons: First, an examination of the blood is necessary before a person can be pronounced anemic; second, anemia may be a symptom of more serious trouble; third, many of the so-called "tonics" on the market are either useless or harmful. Much-advertised iron tonics have been found to contain iron in such small amounts as to be of little value or in a form that is not readily absorbed by the blood. They may give one a false sense of "pep" for a time that is very deceptive.

Anemia is best cured by removing the cause. Sometimes the only tonic the anemic needs is compounded of rest, fresh air and nourishing food. Rest gives the body a chance to conserve its energies and protects the bloodstream from overwork. Fresh air supplies the oxygen the blood needs for its red corpuscles. Certain foods supply iron to the blood in generous quantities. Chief among these are fruits, certain vegetables (notably spinach, beans, cabbage and celery), lean beef and the yolk of egg.

Pernicious anemia, the cause of which is not known, is an acute and very serious form of anemia that frequently

ends in death. Blood transfusion from a healthy person is often necessary.

ANGINA PECTORIS

(See *Heart*.)

ANOPHELES MOSQUITO

(See *Malaria*.)

ANTHRACOSIS

(See *Working Conditions Injurious to Health*.)

ANTHRAX

Anthrax is a disease of cattle, horses, sheep and other cloven-footed animals and may be acquired by men who handle hides or wool of animals. It is sometimes carried by brushes not properly disinfected. Wool sorters and tanners are most likely to have this disease. The germ may enter the skin through a scratch or injury and cause sores on the surface of the body, or it may enter the lungs and cause anthrax of the lungs. In the latter case the disease is usually fatal. Sometimes the germ enters the body through the digestive tract and causes anthrax of the intestines.

The prevention of anthrax is a matter of killing animals infected with the disease and disinfecting skins of animals, wool and hair used in industries. The body of an animal that has anthrax should be burned or buried with lime at least three feet deep to prevent the carcass from being dug up and the germs being spread by animals feeding on the flesh. Workers in tanneries, in brush and wool factories, and furriers can protect themselves by wearing rubber gloves and rubber aprons. Workers in industries where there is

danger of anthrax should of course take especial pains to wash their hands thoroughly before eating and, where ventilation is not sufficient to carry off the dust from hair and wool and furs, respirators should be worn. A strict quarantine on animals that come from anthrax-infected sections is also helpful in controlling this disease.

ANTITOXIN

(See *Diphtheria* and *Scarlet Fever*.)

APHASIA

Aphasia sometimes results from a disturbed condition of that portion of the brain which contains the speech centers or of the arteries which supply that portion of the brain with blood. In this condition a person's power to talk is affected and sometimes his memory. The mind may be otherwise normal and perfectly keen, but it is difficult for the patient to remember words and to articulate them. If the cause is pressure on some part of the brain, normal powers of speech are recovered when the pressure is removed. Recovery is rare when aphasia is due to disease of the brain, as is frequently the case in old age.

Aphasia may also be one of the symptoms of hysteria, and may be of purely mental, rather than physical origin, requiring the attention of a psychiatrist.

APARTMENT HOUSES

(See *Housing*.)

APOPLEXY

Apoplexy, often called a "stroke" or "shock," is a hemorrhage in the brain caused by the bursting of the wall of a

blood vessel. High blood pressure, heart disorders, syphilis and other diseased conditions of the arteries are the chief causes. Living at high tension, worrying, continually overeating, and drinking heavily are habits that favor apoplexy. The business-driven man of middle age is frequently a victim of apoplexy, especially if he combines overwork and overworry with overeating. The man or woman who lives simply and refuses to worry is not likely to be stricken by this condition, at least not until old age has made the arteries hard and brittle. A person who is examined regularly by a physician and follows the physician's orders can, in most cases, keep his blood pressure down and his artery walls strong and elastic.

APPENDICITIS

The appendix is probably the most useless and most troublesome part of the human body. It is a slender tube attached to the large intestine and opening into it. It may easily become infected with germs from the intestines.

Appendicitis manifests itself typically with attacks of abdominal pain, generally associated with vomiting, occasionally with diarrhea and usually, but not always, with some fever. The pain varies in severity. Usually it is in the lower right side of the abdomen where the appendix lies, but it is important to remember that at the outset the pain may be only in the upper part of the abdomen, or in the nature of general cramps.

Abdominal pain, especially with vomiting, but also without, may be indicative of a serious condition such as appendicitis, and it is never wise to assume that it is merely "indigestion" without a medical examination. An acutely inflamed appendix may burst within a few hours, spread-

ing pus into the abdominal cavity and causing peritonitis, which may be quickly fatal. It is this danger that makes prompt operation in many cases imperative.

Habitual over-eating, neglected constipation and intestinal poisoning may be causes contributory to infection and inflammation of the appendix. Blows or falls on the abdomen may, rarely, bring on an attack. (See *Constipation* and *Diet*.)

ARTERIOSCLEROSIS

(*Hardening of the Arteries*)

The health of the tissues and of the organs of the body is dependent on the circulation of the blood. The blood carries the food and oxygen that keep the body cells alive and takes away the waste products rejected. The moment circulation in any portion of the body is impeded, that portion is likely to become diseased. Indigestion may result, if too vigorous exercise immediately after eating drains the blood away from the stomach. Colds often occur when the blood vessels of the air passages undergo radical changes in their blood content.

Anything that interferes with the elasticity of the blood vessels means that these vessels are less able to expand when extra blood is needed in one place. Under certain conditions changes occur in the walls of the arteries, and they become thick and inelastic. Hardened arteries are to be expected in old age, but under the speeding-up of modern life many people suffer from this disease in middle life. The healthy artery expands as the blood is forced into it by the heart in a vigorous spurt, and it sends the blood on its way in a steady, even flow. The hardened

artery may burst, causing hemorrhage and sometimes apoplexy if it is suddenly subjected to increased strain, as from violent exercise or, in the case of the arteries of the brain, from intense mental strain. Hardening of the arteries also increases the strain on the heart, by making it do work that the arteries should be doing. Serious disease of the heart may be caused in this way.

A person whose arteries are hardened may suffer from any or all of the following disorders: frequent headaches, disturbed digestion, fatigue after slight exertion, difficulty in breathing, frequent nosebleed, high blood pressure, swelling of the legs, disorders of the kidneys and disease of the heart. His capacity for mental effort as well as physical effort may be affected.

Williams * classifies causes of hardening of the arteries under two heads: poisons and overwork. Under poisons he includes focal infections, the effects on the system of alcohol, tobacco and lead, and intestinal poisons caused by constipation and unwise choice of foods. Under overwork he includes physical, mental and gastric (that is digestive) overwork. Barker and Cole † are inclined to think that the condition is due "to the presence of some poison of as yet unknown nature and origin circulating in the blood."

Whatever may be the exact cause of arteriosclerosis, physicians agree that prevention and cure lie in simple living. Williams advises temperateness in all things—"in work, in play, in mental endeavor, in eating and in drinking." Barker and Cole sum up their advice as follows:

"The only safe course to pursue is to feel a strong responsibility for the observance of good personal hygiene

* "Personal Hygiene Applied," by Jesse Feiring Williams.

† "Blood Pressure," by Lewellys F. Barker and Norman B. Cole.

and to turn at regular intervals to the family doctor for supervision and advice."

ARTHRITIS

(See *Rheumatism*.)

ARTIFICIAL RESPIRATION

The most frequent causes of stoppage of breathing are drowning, gas poisoning, and electric shock. Whatever



Figure 1.—Correct Position for Patient in Artificial Respiration

the cause, the treatment is essentially the same. It is called artificial respiration, and consists in forcing the patient's chest to imitate the movements of ordinary breathing, thus expelling the water or gas from the lungs and drawing in air.

A person is often given up for dead when artificial respiration, if continued long enough, would save his life. The following method should be used:

(a) Quickly feel with your fingers in the victim's mouth and throat and remove any obstructions to breathing, such as tobacco or false teeth. If the mouth is tight shut, pay no attention to it until later. Don't attempt to pry the jaws open. Don't lose a moment's time. Start artificial breathing.

(b) Lay the patient on his belly, one arm extended directly overhead, the other bent at elbow and with face to one side, resting on the hand or forearm, so that the nose and mouth are free for breathing. (Figure 1.)

(c) Kneel, straddling the patient's hips, with knees just below the patient's hip bones. (Figure 2.) Place the palms of your hands on the small of the back with the fingers over the ribs, the little finger just touching the lowest rib, the thumb alongside of the fingers; the tips of the fingers just out of sight. (Figure 3.)

(d) While counting one, two, and with arms held straight, swing forward slowly so that the weight of your body is gradually, but not violently, brought to bear upon the patient. (See Figure 3.) This act should take from two to three seconds.

(e) While counting three, swing backward so as to remove the pressure, thus returning to the position shown in Figure 2.

(f) While counting four, five—rest.

(g) Repeat these operations deliberately, swinging forward and backward twelve to fifteen times a minute—a complete respiration in four or five seconds. *Keep time with your own breathing.*

(h) As soon as this artificial respiration has been started, and while it is being continued, an assistant should loosen any tight clothing about the patient's neck, chest or waist.

Keep the patient warm. Use blankets or clothing, and possibly, hot water bottles carefully wrapped to prevent burning the patient's skin.

(i) Continue artificial respiration without interruption until natural breathing is restored, if necessary four hours or longer, or until the victim's body is wholly stiff and cold.

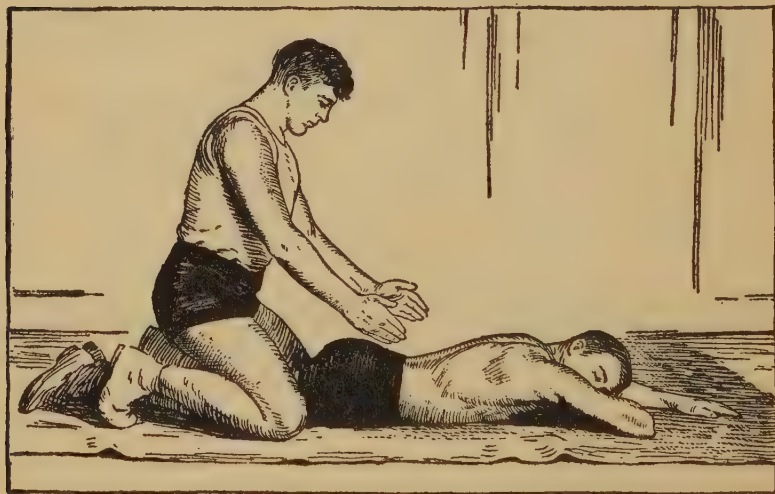


Figure 2.—Position for Operator before Exerting Pressure

If natural breathing stops after being restored, use artificial respiration again. Men breathing when brought out of gas, or after an electric shock, may suddenly stop breathing. Watch your patient carefully and continually.

(j) Do not give any fluid by mouth to an unconscious patient. When he is conscious, he may be given hot, strong, black coffee. Do not give him whiskey or brandy. Keep him warm. Keep him quiet and lying down.

ASTHMA

The word asthma means "a panting." Symptoms are shortness of breath and a wheezing cough, sometimes involving extreme distress. One of the commonest forms of asthma is associated with hay fever. As a rule the disease is called hay fever when it affects the eyes and nose,

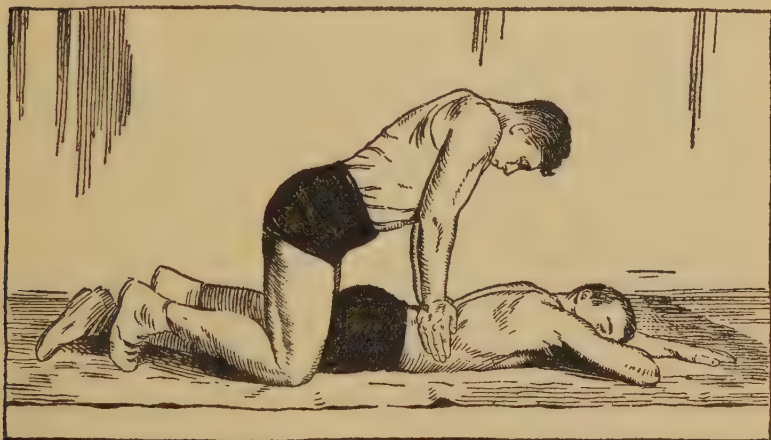


Figure 3.—Correct Method of Applying Pressure in Artificial Respiration

and asthma when it affects the bronchial tubes. The cause is frequently the same—oversensitiveness to certain proteins which affect the system of the patient as poisons. Cases of asthma are often cured by eliminating eggs or some other one protein food from the diet. The dandruff from the skin of horses, cats and other animals is a not infrequent irritant. Asthma is also sometimes associated with certain forms of heart disease. Treatment consists in dieting or inoculation with a serum. Adrenalin prepared

from the adrenal glands of animals is now used in hypodermic injections to relieve attacks. (See *Hay Fever*.)

BACKACHE

(See *Patent Medicines and Quack Cures and Pain*.)

BACTERIA

(See *Germ Theory*.)

BATHING

The health of the body depends in no small measure on the health of the skin. One of the important duties of the blood vessels of the skin is to regulate the temperature of the body. These increase in size when a person becomes over-heated, in order to take care of the over-heated blood within the body. Again, when a person is chilly, these blood vessels contract and send the blood back to be kept warm. Equally important is the work of carrying away body wastes through the pores by the sweat glands. These glands take up water and certain other substances from the blood and pour them out on the surface of the skin. The water evaporates and the solid matter is left on the skin.

As a protection for itself, the skin is equipped with tiny glands, which secrete oil. These glands pour out just enough oil to keep the skin from becoming too dry and cracking, and to make it less likely to absorb impurities.

There are two very important reasons for taking baths.

First: The impurities thrown off by the sweat glands should be removed frequently. Otherwise they will stop up the pores and tend to prevent waste removal in this way.

Second: The nerves of the skin are kept active and

healthy by the stimulating effect of cool or cold baths. Healthy nerves react quickly to a change of temperature and cause the blood vessels to expand or contract as the need may be. Thus, the person who has the cold bath habit is less likely to be affected by exposure to intense heat or cold than a person who bathes infrequently or always takes hot baths.

Hot water, soap and rubbing are the requirements for a hot bath. Such a bath should be taken two or three times a week. Usually a good time to take it is before going to bed at night, although for some people a hot bath is too stimulating to be taken at this hour.

The cool or cold bath is best taken before breakfast. It should be cold enough to be stimulating but not cold enough to be a shock to the system. This can be gauged by whether or not the bath produces a comfortable, warm glowing reaction. If a shower or spray be used, one may use it lukewarm first and then end with a dash of cold water. Rural schools and homes without running water can arrange a shower by perforating the bottom of a pail, hanging it over a tub and pouring water into it. Occasionally a person does not get a reaction of blood to the skin after a cold bath and is merely chilled. Such people should avoid cold baths. Most people, however, will find that a cold bath not only gives them more "pep" for the time being but makes them much less likely to take cold.

Sometimes, when a person is very tired, he is refreshed by a tub bath in water which is not hot but just warm enough to be soothing.

An important part of any bath is the rub-down. A brisk rubbing with a coarse towel helps to rub away any impuri-

ties that may remain on the skin and to bring the warm, healthy afterglow that should always follow a bath.

Bathing, under the right conditions, in lakes, outdoor pools and at sea beaches is both healthful and pleasurable. The greatest danger is that the river or lake may be contaminated by waste products or that the ocean tides may wash in the impurities from garbage or sewage. Local health authorities should be responsible for the safety of a body of water for bathing purposes.

Baths are an important part of treatment in many disorders. The beginning of a cold may often be broken up by a hot bath followed by bed and blankets. The bath dilates the small surface blood vessels and equalizes the circulation of the blood, thus relieving congestion in the head or throat. Repeated hot baths often are of great help in relieving rheumatic pains. Warm baths are frequently used in the treatment of Bright's disease. Prolonged warm baths may induce sleep for the victim of insomnia when nothing else will. In the case of high fevers, for example in typhoid, cold baths may be one of the most valuable curative measures in keeping down the temperature. They should be given, of course, *only under the direction of a physician*, since some patients cannot stand the shock. The usual method is first to immerse the patient in warm water and then gradually cool the bath.

Turkish baths are classed by Williams* as luxuries rather than necessities. They may be, in his opinion, of value after severe physical exertion and for certain types of rheumatic disorders. Bowers† considers them poor makeshifts for Nature's method of producing perspiration.

* "Personal Hygiene Applied," by Jesse Feiring Williams.

† "Bathing for Health," by Edwin F. Bowers.

Since earliest times certain mineral springs have been thought to have curative powers. Hotel proprietors and real estate dealers have not been slow to capitalize these supposed healing powers, and great health resorts have grown up around these springs both in Europe and in this country. How large a part mineral springs play in curing disease is open to question. Williams is of the opinion that "much of their supposed value lies in the comfortable surroundings, the outdoor activities, the exercise, the baths. Persons in good health do not require special waters; persons with disease should consult a physician."

BATHROOMS

(See *Home Hygiene*.)

BATHS, PUBLIC

Many cities maintain municipal shower and pool baths for use either free of charge or for a small fee. Various organizations like the Y. M. C. A. and Y. W. C. A. include bathing facilities in their equipment. These usually offer hot and cold showers and use of a swimming pool. Public swimming pools are a blessing to city dwellers who cannot easily get to lakes and seashore, if proper precautions are taken in changing and disinfecting the water, so as to avoid the spread of diseases, especially those of the nose and throat. The water should be examined frequently by the Board of Health. It is well to consult the Board of Health before using any public pool.

BEDBUGS

(See *Vermin*.)

BEDROOMS, Care of

(See *Home Hygiene*.)

BED SORES AND THEIR PREVENTION

Unless preventive precautions are taken, a patient who is confined to bed is in danger of developing bed sores. These are both dangerous and painful, adding much to the discomfort of the patient. In rare instances the bed sore may start under the skin and may not be visible until after it has progressed to dangerous extent. Usually, however, the bed sore can be recognized by the attendant. There is a red or rash-like appearance of the skin covering the parts of the body which are most subject to pressure; for example, the end of the spine, the shoulder blades, elbows, hips, heels and toes. The patient may complain of pain or of a stinging sensation, or he may not. The parts affected may show a dark blue color. Sometimes the bed sores may be determined from the presence of blisters, like water blisters, which burst and break the skin.

These bed sores should be given careful attention, for they frequently retard the patient's recovery and may even develop into serious ailments, regardless of the disease from which the patient suffers. The physician's attention should be directed immediately to any sign of redness or breaking of the skin.

But these troubles can usually be prevented if the attendant will conscientiously take preventive measures. Bed sores are caused by interference in blood circulation, generally due to abnormal pressure. Such pressure may be the result of lying in bed; of rubbing one part of the body against another; of rough sheets or crumbs. Bed sores

may also come from irritation of the skin due to moisture caused by wound drainage, urine, etc.

The best treatment to prevent bed sores is to bathe the parts often, avoid pressure, and turn patient frequently. In the treatment of bed sores, ask the physician for orders to be followed.

BED WETTING

(See *Enuresis*.)

BERIBERI

This disease is most common in tropical countries, where diets are much restricted because of poverty. In eastern countries it is thought to result from the extensive use of polished rice, that is, rice from which the husk has been removed and with it the important vitamin B. Insufficient or improper food of other kinds may cause the disease. Other factors contributing to its development (given the dietary deficiency) are exposure to dampness and cold, unhygienic and unsanitary conditions of living and any chronic infection or poisoning which interferes with nutrition and causes anemia, such as syphilis, malaria, alcoholism and metallic poisoning. Symptoms are weakness, general pains, soreness and weakness of the muscles, lack of muscular tone, headache, coated tongue, loss of appetite, fever and bowel disorders.

There are two forms of this disease. One is called wet beriberi. In this form, there is swelling in the limbs, which gradually extends to the entire body. Breathing is difficult and heart action is weak. In the dry variety, there is less swelling and less disturbance in the heart action, but there is more pain. Cramps and spasms of the muscles

are features. An important part of treatment is to improve the diet and the general living conditions of the patient.

The prevention of beriberi among expectant mothers and infants in the Philippines is accomplished by the widespread use of an extract of the rice husk, supplied free by the government laboratories and prescribed throughout pregnancy and the nursing period. This substance, called tiki-tiki extract, contains the concentrated essence of the bran rice husks and has a high percentage of the vitamin B. Loss of infant lives has been reduced to a third by the preventive use of this substance. (See *Diet*.)

BLACK DEATH

(See *Bubonic Plague*.)

BLEEDING

There is danger of serious bleeding from a deep cut or wound. In this case, everything must give way to stopping the bleeding, or death may occur. There are three kinds of bleeding, depending upon the kind of blood vessels from which the blood comes. From the fine capillaries the blood oozes slowly, and can be stopped by the pressure of the dressing. This is also the case with all except the largest veins. An artery remains open, and from it a considerable amount of blood will be lost in a short time. This blood is bright red, and is thrown out in spurts with each beat of the heart. The flow from veins and capillaries is steady and of a darker color.

The only veins in which it is likely to prove difficult to stop bleeding are those of the neck, and enlarged veins of the legs, called varicose veins, which sometimes burst.

No time is to be lost if bleeding is from the large veins of the neck. The person in attendance should place his fingers on the bleeding points and press on the vein to stop bleeding. A hurry call should be sent for a physician. If possible, the fingers should be kept on the bleeding point until he arrives. If this is impossible gauze or cloth may be stuffed into the wound to replace fingers.

Varicose veins are not usually so serious, but bleeding from them may be alarming and dangerous. A physician is required. The patient should lie flat on his back with his head low, all bands around the legs should be removed, and the leg should be raised so that it is at right angles with the body. The usual dressing of gauze and a bandage should be put firmly in place over the bleeding part.

Bleeding from the arteries is most serious. The amount of blood lost depends on the size of the artery. If the stream of blood is a really fine one, the pressure of the dressing will stop it. In large arteries, this plan will not succeed. If a great deal of blood is being rapidly lost, one is justified in forgetting about infection and putting his finger directly on the bleeding point in the wound, afterward replacing this with enough gauze to maintain the pressure. Arteries are like a hose. Pressure on the hose, or artery, at any place nearer the source of supply, or the heart, will stop the stream flow. The person in attendance must find a place where he will have something hard to press the artery against. In the arm, this is in the middle of the upper arm, just on the inner side of the big muscle. In the leg, it is not so easy to find. It is high up on the front of the thigh, midway between the point of the hip and the center of the crotch. Pressure here, back on the bone, will stop bleeding from an artery below. Make pres-

sure first with the fingers. They will tire quickly and must be replaced by what is called a tourniquet. This is an apparatus which has a pad to put on the artery and a strap over the pad encircling the limb. By twisting, the



Correct way to apply tourniquet to stop bleeding from arm

strap is tightened and presses the pad down on the artery, thus checking the flow of blood. The strap may be made of a towel or handkerchief. The ends should be tied together so as to encircle the limb. Any hard pad, of the size of an egg or a little larger or smaller, will do. This should be put in the towel to rest over the artery. A darning

ball makes a good pad. Pressure is made by putting a stick in the loop of the tourniquet at the outside and twisting. (See illustration.)

A rough method of stopping bleeding from arteries at any point below the knee or elbow is to put a pad in the bend of the knee or elbow and to bend the leg or arm at the joint as close as possible so that the pad will be firmly squeezed. The bent limb must then be tied in this position. Neither tourniquet nor pad should be left in place over fifteen or twenty minutes, for, by cutting off the circulation, it may cause gangrene of the limb below. Whenever a tourniquet is used, a physician should be called at once. It should be used only for bleeding from a large artery.

Stimulants should not be given until the bleeding has been stopped, unless necessary as shown by extreme weakness, pallor, fainting, or gasping for air. Stimulants increase the force and power of the heart and thus increase the blood supply, thereby making it more difficult to stop the bleeding.

BLINDNESS

(See *Eyes*.)

BLOOD POISONING (Septicemia)

A cut, scratch or open sore on any part of the body is like a break in an old-time warrior's armor. Harmful bacteria are quick to find an opening in the body's protective armor of skin. If they are not killed by a sentry in the form of an antiseptic, they may find their way into the blood. The amount of damage bacteria may do in this way depends on how poisonous they are, to what extent

they gain entrance to the bloodstream and the condition of the blood.

A scratch on one's finger may heal in a day or two with little or no soreness in the immediate vicinity. In another case, the scratch may be just as slight but the whole hand and arm becomes red, swollen and painful. The patient feels weak and ill all over, may be sick for weeks and may die from the effect of the poison on the heart and other vital organs. An even more severe poisoning of the blood will cause death within a day or two from the time the inflammation begins, no matter what treatment is given.

Most cases of blood poisoning could be prevented, if wounds were treated promptly and in a cleanly fashion and if antiseptics were used in time. Any flesh wound, no matter how slight, should be disinfected at once, with tincture of iodine, if small, or with Dakin's solution (of sodium hypochlorite) of which some stable preparations are obtainable at drugstores. After applying the antiseptic, the wound should be covered with clean (preferably sterilized) gauze, absorbent cotton or a clean handkerchief. Peroxide of hydrogen is not as good an antiseptic as Dakin's solution or iodine, but it is excellent for wound cleansing. Hang-nails and, indeed, most scratches, cuts and mild infections had best be covered with gauze moistened in Dakin's solution, boric acid solution or plain boiled water, and kept moist with a covering of oiled silk. The secretions thus escape into the dressings instead of drying on and crusting over the wound. Bichloride of mercury and carbolic acid, and all liquid preparations containing phenol (carbolic acid) and cresol intended for application to the skin, should be excluded from the family medicine chest.

They are too apt to cause death of the tissues or poisoning by absorption and, besides, they are often swallowed by mistake, with fatal results. (See *Accidents*.) An individual receiving a wound by blank cartridge, or a wound contaminated by street dirt or from the soil should go to his physician for a preventive injection of tetanus (lockjaw) antitoxin. (See *Lockjaw*.)

When a flesh wound remains swollen and painful a physician should always be consulted promptly. If the patient waits until the pain is severe the bacteria may have penetrated the blood stream, and it may be too late to save his life.

Protection against blood poisoning is of course partly a matter of keeping up the resistance of the body to disease. When the blood is in its normal, healthy condition, it can muster a strong defense on short notice by means of the phagocytes, or white blood cells, which multiply rapidly and literally eat up the germs that are causing the infection. Recovery from severe blood poisoning depends to a large extent on maintaining the patient's strength with nourishing food and careful nursing.

BLOOD PRESSURE

Within recent times an instrument known as the sphygmomanometer has been devised for measuring in columnar millimeters of mercury the degree of force which the blood in the arteries exerts, as well as the force of the heart's contractions. By attaching this instrument to the arm of the patient the doctor is enabled to tell something about the patient's general health—whether the walls of the arteries are in a healthy condition and whether the heart and other organs are functioning properly. For example, a very high

blood pressure may be a symptom of hardening of the arteries; it may be a warning of kidney or heart disorder; or it may indicate that the patient is in a state of worry and high nervous tension or a victim of intense living. Low blood pressure also may accompany certain types of heart and circulatory disorders.

A very high blood pressure should always be viewed as a warning that the body needs attention. Even if no organic trouble is found to be the cause, a thorough revision of living habits is necessary. Simple diet, no stimulants, plenty of sleep and a generally calm, philosophic attitude toward life are important factors in preventing high blood pressure. A blood pressure test should be taken each year in connection with the regular medical examination. (See *Medical Examination*.)

BOILS AND CARBUNCLES

Boils are caused by germs. These germs are constantly on and in the skin. They do not cause trouble, however, unless the body is in such a condition that it cannot overcome the poisons the germs are constantly producing. For example, a person who is tired out from worry or long-continued physical exertion is likely to have boils, because the natural resistance of the body has been very much lowered. A diet of heavy, greasy foods and chronic constipation seem to favor the disease.

The strictest cleanliness is necessary in the treatment of boils; one should never touch a boil with anything that has not been sterilized.

A carbuncle is like a boil, only larger, more deeply seated, more painful, and is more serious. Surgical treatment is usually necessary. Frequently vaccines are used.

Boils and carbuncles are contagious. Care should be taken to wash the hands thoroughly after touching a boil or carbuncle.

It is usually best to have boils, and always necessary to have carbuncles, treated by a physician. In this way their spread may be limited and danger of more serious infection sometimes following careless home treatment avoided.

BOOTLEG LIQUOR

(See *Alcoholism*.)

BOTULISM

Occasionally one reads in the newspapers of whole families or small groups of people being suddenly taken ill with a violent form of poisoning known as "botulism." The first symptoms are weakness, apprehension and disturbance of vision.

This disease is caused by a bacillus sometimes found in foods that have been improperly cooked or preserved. A very small amount of food poisoned in this manner is sufficient to cause violent symptoms and death. The poisoning seems to occur most often in canned goods, such as string beans, corn, asparagus and spinach. Home canned foods have been frequently responsible, also smoked meats and sausages. Several years ago fatal cases of botulism were traced to ripe olives put up in glass jars. An investigation made by the State Health Department of California showed that the olives had not been heated to a high enough temperature to destroy the *bacillus botulinus*. Simply raising the temperature destroyed the poison.

Prevention of this disease is a matter of caution in re-

gard to eating and to home canning. It is important to remember that only fresh, clean food should be used in canning, and that it should be heated to 120 degrees Centigrade for ten minutes before sealing. Care should be taken never to use food that shows any evidence of gas-bubbles, or any meat that shows the slightest evidence of not being strictly fresh, and to keep food on ice in hot weather.

The germ of botulism is occasionally found in food that is allowed to stand about at an ordinary temperature after cooking.

An antitoxin for this disease has been perfected, which is useful in checking the progress of the poisoning, if it is administered at once. When a case of this disease occurs, it is always wise for other persons who may have eaten the food, which is suspected of being the cause of the trouble, to take antitoxin treatment immediately.

Ptomain Poisoning. So-called "Ptomain" poisoning is in reality an infection. Rosenau attributes most, if not all, cases to acute infections from a certain group of bacilli. Prevention of food infection involves thorough meat inspection and scrupulous cleanliness in handling food in all stages of its preparation and marketing. The housewife can do much to protect her family by cooking food thoroughly and keeping it on ice.

BOWLEGS

(See *Rickets*.)

BRAN

(See *Constipation*.)

BRIGHT'S DISEASE (Nephritis)

Bright's disease, or nephritis, is a disordered condition affecting the cells of the kidneys, which prevents these organs from completely doing their work of removing impurities from the body.

The function of the kidneys is to remove from the blood excess water and waste materials. This amounts to three or four pints of liquid in a day. The wastes removed by the kidneys are chiefly the substances from protein foods discarded by the body. (See *Diet*.) Anything that interferes with the proper functioning of these organs seriously affects the health of the whole body. The kidneys are especially likely to become diseased in middle life or in old age. This may in part be due to the fact that the body is usually supplied with more protein food than it needs at this time of life. Hence the waste products are a heavy burden for the kidneys. Those who would avoid kidney disorders should heed Osler's warning that "we eat too much after forty years of age." He who would have his kidneys last as long as the rest of his body would do well to follow these rules of sensible living.

1. Eat meat not more than once a day.
2. Avoid highly seasoned foods.
3. Avoid excessive use of alcoholic drinks.
4. Drink eight glasses of water a day. (Plenty of water keeps the kidneys flushed out.)
5. Keep the sweat glands, which remove waste from the skin, active by taking regular exercise and bathing frequently.

There are two forms of Bright's disease, one acute, the other chronic. In its acute form it yields frequently to

treatment, but chronic Bright's disease is not curable. The former may develop at any time of life as a complication of some other disease—scarlet fever, for example—or as a result of severe strain or exposure. During the World War it attacked soldiers who had been under the strain of trench life. The symptoms are fever, aching in the loins and often scanty or bloody urine. Absolute rest in bed and a carefully regulated diet are the chief essentials of cure. Meat, meat broths, eggs and other foods rich in protein should be avoided or taken very sparingly. Alcohol, coffee, tea and tobacco should be wholly avoided.

Chronic Bright's disease is one of the serious disorders of middle life. It may steal upon a person without his being aware of its approach, the kidneys gradually filtering out the waste products from the blood less and less thoroughly until the body finally gives way under the strain.

The way to detect and prevent chronic kidney disease is to have a thorough medical examination, including urinalysis every year. A physician can discover the first signs of Bright's disease from the presence of albumen, small bodies called "casts" and other abnormal substances in the urine. Self-doctoring for kidney troubles with patent medicines is highly dangerous. The detection of kidney disorders requires the diagnosis of a physician equipped with a laboratory. Relief is largely a matter of altering diet and manner of living.

BROKEN BONES (Fractures)

How can one tell that a bone has been broken? The injured person says that he has had a fall or blow. He complains of pain at a certain point, and there is tenderness and often swelling or deformity there; he cannot move

the injured part. From these signs one cannot be sure that the injury is a fracture, but it is better to treat it as such than to make any further examination, which might cause movements of the sharp ends of the broken bone and thus do further damage to the soft tissues. A physician should be sent for immediately.

Shock must be treated at once if it exists. This is more important than the fracture. (See *Accidents*.) The person in attendance should cut off the clothing from the injured part and determine whether the skin has been broken at the site of fracture. If there is a break in the skin, the case is far more serious. A wound must be dealt with as well as a fracture. (See *Blood Poisoning*.) The wound should be given first attention.

The main object in treating fracture is to keep the parts of the broken bone from moving. If the limb is allowed to bend at the point of fracture, the sharp knife-like edges of bone will do further damage to the soft tissues. If the physician is coming soon, and it is not necessary to move the person, carefully place the injured limb in a comfortable position on a pillow. If the physician's coming is long delayed, or if the person must be moved, try to set the fracture and hold the bone in position by splints.

To set the broken bone, put it into the same position that it was in before the break occurred. Do this by comparing it with the uninjured part on the other side of the body. This should be done very gently; if it causes a great deal of pain or if the patient resists, it will be safer not to go further, but to hold the limb in its present position by splints. Do not try to set a fracture in which the bone ends stick through the skin. Simply treat it as a wound and keep it from moving by splints.

First Position for Adjustment of Diagonal Cloth to Make a Comfortable Sling



Completed sling

Any long rigid piece of material may serve as a splint. While a flat board is best, canes, umbrellas, broom handles

or wire netting may be used. (The splints should be long enough to extend beyond the joints above and below the injury.) A wide splint is better than a narrow one, for then the bandages make less pressure on the limb. A thick padding for the splint should be made of any available cloths or clothing.

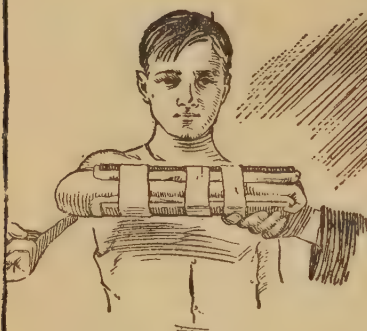
The splint may be bandaged to the limb by any handy strips of cloth. These bandages should be firm, but not tight enough to cause pain or stop the circulation. In case of a broken arm or leg it is necessary to examine the hand or foot from time to time. If it is cold or blue, the bandages should be removed and reapplied more loosely. Swelling may occur after the bandages have been put on, so that a bandage which at first was not too tight may later stop the circulation and cause gangrene and loss of the limb. The proper splinting for the more common fractures is shown on page 38.

A sling for a broken arm or collarbone is made of a diagonally folded piece of cloth about two and one-half feet square, adjusted as shown on page 36. The two long points are tied behind the neck; the middle point may be pinned across the front piece, thus supporting the elbow and keeping the arm from slipping out of the sling.

If the patient has hit his head and seems stunned or even unconscious, there may be a fracture of the skull. A physician's help is needed at once. Disturb the patient as little as possible; do not move him unless it is necessary. Do not give stimulants.

BRONCHITIS

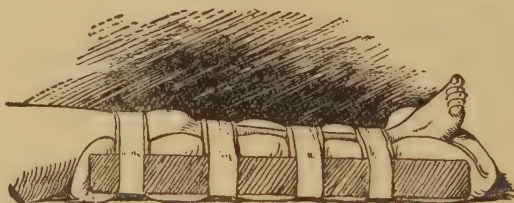
(See *Colds*.)



*Splint for broken forearm
or wrist*



*Splint and sling for broken
upper arm*



Splint for broken lower leg



Splint for broken thigh

BRUISES

The pain of a severe bruise may be relieved by raising the part affected and by applying cloths wrung out of cold water.

A black eye is a bruise and should be treated as such with cold applications. If treatment is not begun until the skin has already become black and blue, hot water applications for half an hour, three times a day, will hasten the disappearance of swelling and discoloration. If the blow was severe, have a physician examine the eye.

BUBONIC PLAGUE

We read in history about a "Black Death," which swept over Europe in the fourteenth century and destroyed one-fourth of the entire population. This was the same disease we now know as bubonic plague, one of the most dangerous of all the communicable diseases. It causes the death of large numbers to-day in many countries. In India it killed some ten million people between 1896 and 1917.

Bubonic plague is a germ disease. The germ is carried by fleas, which leave the bodies of rats and other rodents infected with this disease and infest human beings. The principal method of controlling plague is to wage war upon rats, by trapping, poisoning and above all by destroying rat-breeding places. Ships coming to this country from plague-infected ports must undergo a disinfecting process or de-ratting of hold and cargo, taking not over twenty-four hours. Infected ground squirrels constitute a similar problem in several of our Pacific Coast and western states.

At least on two outstanding occasions this country has been threatened with epidemics of plague which might have

killed thousands, had it not been for prompt quarantine and rat-extermination measures taken by public health officials. Freedom from this disease in the United States is due in large measure, also, to the precautions taken by port officials and immigration authorities. (See *Public Health Officers* and *United States Public Health Service*.)

Bubonic plague starts with a chill, high fever, dizziness, delirium and complete prostration. In one form of the disease lumps or buboes appear in the glands of the groin, thigh or in the armpit and neck and in the tonsils. Another form of the plague attacks the lungs, like the most violent form of pneumonia.

Care of a plague patient must include the strictest quarantine and disinfection of everything connected with the sickroom. Every possible effort should be made to get rid of rats.

A plague serum has been perfected which is valuable as a preventive and to a degree effective in treatment. In the temperate and cool climates in this country and in other countries it is common for the disease, once it has attacked human beings, to change abruptly from the bubonic or gland type to the pneumonic or lung type. For the spread of this form of the disease rats and fleas are in no way responsible, the discharges of nose and throat by spitting, sneezing and coughing being a virulent and ready means of transferring the infection. (See *Rats*.)

BUILDING FOODS

(See *Diet*.)

BUNIONS

(See *Clothing*.)

BURNS AND SCALDS

Burns are caused by dry heat, and scalds by moist heat. With both, the injury may be very shallow, skin-deep only, or very deep, down to the bone. Shock is often severe. All burns which are very deep, covering a large surface, or in which shock is serious, require the services of a physician.

First of all, treat shock if it is present. (See *Accidents*.) Then try to stop the pain by protecting the burn from the air. Good remedies are a paste made of baking-soda and water, carbolized vaseline, olive oil or any grease, like lard or even cream. Put one of these substances on the burned part, cover with a piece of cloth, and bandage or tie in place. Surgical gauze may be used for the cloth, but this is not necessary. Do not break blisters. In burns from strong acids or alkalis, wash off as quickly as possible. For acids, neutralize with baking-soda in water or soapsuds; for alkalis, use vinegar or lemon juice. Afterward treat like other burns.

Sunburn is like any other mild burn, and should be treated accordingly. Baking-soda and water, or cold cream lessen the discomfort.

Electric Burns.—The skin is severely burned where the electric current goes through it. When the patient is in a state of shock, disregard the burn until the general condition is improved. Then treat as for other kinds of burns. In case of electric burn, a physician should always be called, for the current may have caused internal injuries.

CALORIES

A calorie is a heat unit, and since energy is easily transformed into heat the calorie has been adopted as the unit

42 A POPULAR ENCYCLOPEDIA OF HEALTH

for measuring the energy food gives to the body. By the calorie method it is possible to tell how much value to the body any given food possesses. (See *Diet*.)

The average serving of a number of foods yields about 100 calories. The following table gives some typical 100-calorie portions:

FRUIT		100 Calories
Apple	1 large apple	
Apple sauce	$\frac{3}{8}$ cup	
Apple, baked	$\frac{1}{2}$ large with 2 tablespoons juice	
Apricots, stewed	$\frac{1}{4}$ cup	
Banana	1 large banana	
Berries	1 cup	
Cantaloupe	1 melon, $4\frac{1}{2}$ inches in diameter	
Cherries	1 cup	
Dates	4 dates	
Figs	$1\frac{1}{2}$ figs	
Grapes	20 grapes	
Grapefruit	$\frac{1}{2}$ grapefruit	
Orange	1 large orange	
Peach	3 medium peaches	
Pear	2 medium pears	
Pineapple, fresh	2 slices, one inch thick	
Pineapple, canned	1 slice with 2 tablespoons juice	
Plums	4 medium plums	
Prunes, stewed	2 with 2 tablespoons juice	
Rhubarb, stewed	$\frac{1}{2}$ cup	
Tangerine	2 tangerines	
CEREAL		100 Calories
Shredded Wheat Biscuit	$\frac{1}{2}$ biscuit with $\frac{1}{4}$ cup milk and 1 teaspoon sugar	
Corn Flakes	$\frac{1}{2}$ cup cereal with $\frac{1}{4}$ cup milk and 1 teaspoon sugar	
Puffed Rice		
Puffed Wheat	$\frac{1}{3}$ cup cooked cereal with $\frac{1}{4}$ cup milk and 1 teaspoon sugar	
Corn meal		
Cream of Wheat	$\frac{1}{3}$ cup cooked cereal with $\frac{1}{4}$ cup milk and 1 teaspoon sugar	
Farina		
Oatmeal	$\frac{1}{3}$ cup cooked cereal with $\frac{1}{4}$ cup milk and 1 teaspoon sugar	
Rice		
Wheatena	$\frac{1}{3}$ cup cooked cereal with $\frac{1}{4}$ cup milk and 1 teaspoon sugar	
BREADSTUFFS AND COOKIES		100 Calories
Bran muffins	1 small	
Bread, white	medium loaf, slice one-half inch thick	
toast	medium loaf, slice one-half inch thick	
graham	medium loaf, slice one-half inch thick	
whole wheat	medium loaf, slice one-half inch thick	
Bun, sugar	$\frac{1}{2}$ small	
Coffee cake	cube $1\frac{1}{2}$ inches	
Cookies	1 cookie, 3 inches in diameter	
Corn bread	slice, 2 in. by 2 in. by 1 in.	
Doughnut	$\frac{1}{2}$ medium	
Griddle cake	1 cake, 4 inches in diameter	
Muffin	$\frac{3}{4}$ muffin	
Roll	1 roll	
Waffle	$\frac{1}{2}$ waffle, 6 inches in diameter	
Zwieback	3 pieces	

Soups	100 Calories
Asparagus (cream)	$\frac{1}{2}$ cup
Bean	$\frac{1}{2}$ cup
Bouillon	4 cups
Celery (cream)	$\frac{1}{2}$ cup
Chicken	1 cup
Clam chowder	$\frac{3}{4}$ cup
Consommé	4 cups
Corn (cream)	$\frac{1}{2}$ cup
Oyster stew	$\frac{1}{2}$ cup
Pea	$\frac{3}{8}$ cup
Tomato, clear	1 cup
cream	$\frac{1}{2}$ cup
Vegetable	1 cup
VEGETABLES	100 Calories
Asparagus	20 stalks
Beans, lima	$\frac{1}{2}$ cup
string	2 cups
Beets	4, 2 inches in diamet
Cabbage	2 cups
Carrots	4-5 young
Cauliflower	small head
Celery	30 stalks
Cole slaw	1 cup
Corn, canned	$\frac{1}{3}$ cup
on the cob	2 ears, 6 inches long.
Cucumbers	2, 7 inches long
Lettuce	2 heads
Onions, raw	3-4 onions
creamed	2 onions
Parsnips	3 large slices
Peas, canned	$\frac{3}{4}$ cup
fresh	$\frac{3}{4}$ cup
creamed	$\frac{1}{2}$ cup
Potatoes, baked	1 medium
boiled	1 medium
creamed	$\frac{2}{3}$ cup
fried	$\frac{1}{2}$ cup
mashed	$\frac{1}{2}$ cup
Radishes	30 radishes
Sauerkraut	2 cups
Squash	1 cup
Spinach	2 cups
Sprouts	2 cups
Tomatoes, canned	2 cups
raw	2-3 medium
Turnips	1 cup
MEAT, FISH AND SEA FOOD	100 Calories
Bacon	4 small pieces
Beef, dried	4 slices, 4 in. by 5 in.
Beef stew	$\frac{5}{8}$ cup
Bologna	1 slice, 4 in. diam., $\frac{1}{8}$ in. thick
Chicken	$\frac{1}{4}$ cup
Chow Mein	$\frac{1}{4}$ cup
fricassee	$\frac{1}{4}$ cup
à la King	$\frac{1}{4}$ cup
Clams	6-12 clams
Corned beef	1 slice, 4 in. by 1 in. by 1 in.
Codfish, creamed	$\frac{1}{2}$ cup
Duck	very small portion
Frankfurter	1 small frankfurter
Halibut	3 in. by 2 $\frac{1}{4}$ in. by 1 in.
Ham	slice 4 in. diam., $\frac{1}{8}$ in. thick
Hamburg steak	2 $\frac{1}{2}$ in. diam. and $\frac{1}{8}$ in. thick
Ham omelette	$\frac{1}{8}$ cup
Lamb chop	1 chop, 2 in. by 2 in. by $\frac{1}{2}$ in.

MEAT, FISH AND SEA FOOD 100 Calories (*continued*)

Liver	2.1 oz.
Lobster	$\frac{3}{4}$ cup
Mackerel	medium portion
Oysters	$\frac{2}{3}$ cup solid or 6-12 oysters
Pork chop	$\frac{1}{2}$ average chop
Roasts, beef	slice 5 in. by $2\frac{1}{2}$ in. by $\frac{1}{4}$ in.
lamb	slice 5 in. by $2\frac{1}{2}$ in. by $\frac{1}{4}$ in.
veal	slice 2 in. by $2\frac{3}{4}$ in. by $\frac{1}{8}$ in.
pork	slice 2 in. by $2\frac{1}{4}$ in. by $\frac{1}{8}$ in.
Salmon, canned	$\frac{1}{2}$ cup
fresh	average portion
Sardines	3-6 sardines
Sausage	2 small
Scallops	$\frac{1}{2}$ cup
Smelts	3 average
Steak, sirloin	2 in. by $1\frac{1}{2}$ in. by $\frac{3}{4}$ in.
Tongue	2 small slices
Trout	3 8-inch trout
Tuna fish	$\frac{1}{2}$ cup
Turkey	small portion
Veal cutlet	$\frac{2}{3}$ serving

SALADS

100 Calories

Crab meat	$\frac{1}{3}$ serving (2 oz.)
Egg	$\frac{2}{3}$ serving (1.4 oz.)
Potato	$\frac{1}{2}$ serving (1.7 oz.)
Tomato and cucumber	$\frac{5}{8}$ serving (2 oz.)
Tomato and lettuce	$\frac{1}{2}$ serving (2.7 oz.)
Sardine	$\frac{1}{3}$ serving (1.1 oz.)
Waldorf	$\frac{2}{3}$ serving (1.2 oz.)

MISCELLANEOUS

100 Calories

Apple sauce	$\frac{3}{8}$ cup
Baked beans	$\frac{1}{3}$ cup
Baking powder biscuits	2 small
Butter	1 in. by 1 in. by $\frac{1}{4}$ in.
Candy, chocolate creams	1 piece
fudge	1 in. cube
milk chocolate	2 in. by 1 in. by $\frac{1}{8}$ in.
Cheese soufflé	$\frac{1}{2}$ cup
Crackers, graham	2 crackers
saltines	6 crackers
soda	4 crackers
Cranberry sauce	$\frac{1}{4}$ cup
Cream cheese	2 in. by 1 in. by $\frac{3}{8}$ in.
Cream sauce	$\frac{1}{8}$ cup
Dressing (stuffing)	$\frac{1}{8}$ cup
French dressing	$1\frac{1}{2}$ tablespoons
Gravy	2 tablespoons
Hash	2 ozs. or 1 heaping tablespoon
Hard sauce	1 tablespoon
Honey	1 tablespoon
Ice cream soda	$\frac{1}{3}$ average soda
Jam	1 tablespoon
Jelly	1 tablespoon
Macaroni, cooked	1 cup
Macaroni and cheese	$\frac{1}{2}$ cup
Maple syrup	1 tablespoon
Mayonnaise	1 tablespoon
Olives	4 large
Peanut butter	1 tablespoon
Pickles	1 tablespoon
Popovers	1 popover
Raisins	$\frac{1}{4}$ cup
Rabbit	$1\frac{1}{2}$ tablespoons rarebit, $\frac{1}{2}$ slice toast
Rice, cheese and tomatoes	$\frac{1}{4}$ cup
Stuffed pepper	1 pepper

MISCELLANEOUS		100 Calories (<i>continued</i>)
Sugar	3	teaspoons
Sundaes	$\frac{1}{3}$	portion
Tomatoes, stuffed	1	tomato
DESSERTS		100 Calories
Angel cake	2 in. by 2 in. by 2 in.	
Apple snow	1	cup
Apple tapioca	$\frac{1}{4}$	cup
Apple dumpling	$\frac{1}{3}$	medium
Bread pudding	$\frac{1}{4}$	cup
Brown Betty	$\frac{1}{5}$	cup
Cake, layer	2½ in. by 2½ in. by 1 in.	
plain	1¾ in. cube	
Charlotte Russe	$\frac{1}{2}$	Charlotte Russe
Chocolate Blanc Mange	$\frac{1}{4}$	cup
Coffee jelly	1	cup
Cornstarch pudding	$\frac{1}{4}$	cup
Cream puff	$\frac{3}{4}$	cream puff
Custard, cup	$\frac{1}{3}$	cup
soft	$\frac{1}{3}$	cup, scant
Fig pudding	$\frac{1}{5}$	cup
Floating Island	$\frac{1}{3}$	cup
Fruit cake	1 in. cube	
Gingerbread	1 in. by 2 in. by 2 in.	
Jello	$\frac{1}{2}$	cup
Junket	$\frac{1}{2}$	cup
Macaroons	2	macaroons
Ice Cream	$\frac{1}{4}$	cup
Plum pudding	1 in. cube	
Pie, apple	sector, 1½ in. at circumference	
custard	sector, 2 in. at circumference	
lemon	sector, 1 in. at circumference	
mince	sector, 1 in. at circumference	
pumpkin	sector, 2 in. at circumference	
squash	sector, 2 in. at circumference	
Prune soufflé	$\frac{2}{5}$	cup
Rice pudding	$\frac{1}{2}$	cup
Tapioca	$\frac{2}{5}$	cup
Sherbert	$\frac{1}{4}$	cup
Strawberry shortcake	$\frac{1}{3}$	average portion
EGGS		100 Calories
Egg, boiled or poached	1 large	
fried	1 small	
scrambled	$\frac{1}{4}$	cup
omelette	1	egg
BEVERAGES		100 Calories
Cocoa	$\frac{1}{2}$	cup
Coffee	1 cup with 2 teaspoons sugar and	
1 teaspoon cream		
Fruit juice	$\frac{1}{2}$	cup
Milk	$\frac{9}{8}$	cup
Postum	1 cup with 2 teaspoons sugar and	
1 teaspoon cream		
Tea	1 cup with 2 teaspoons sugar and	
1 teaspoon cream		
DAIRY PRODUCTS AND FATS		100 Calories
Bacon fat	1	tablespoon
Butter	1	tablespoon
Cheese, cottage	5½	tablespoons
full cream	2 in. by 1 in. by ¾ in.	
Neuchatel	2	tablespoons
Swiss	4½ in. by 3½ in. by ½ in.	
Cream, 18% fat	$\frac{1}{4}$	cup
40% fat	1½	tablespoons

46 A POPULAR ENCYCLOPEDIA OF HEALTH

DAIRY PRODUCTS AND FATS	100 Calories (<i>continued</i>)
Oleomargarine	1 tablespoon
Olive oil	1 tablespoon

NUTS	100 Calories
Almonds	12 to 15 nuts
Brazil nuts	2 nuts
Butter nuts	4 to 5 nuts
Hickory nuts	15 nuts
Peanuts	20 to 24 peanuts
Pecans	12 pecans
Walnuts	8 to 16 nuts

CAMPS

The summer camp is a health builder. A vacation at a camp is no longer a luxury, since so many camps are now maintained by social organizations and by county and city boards of recreation. Every child should have a chance for the body-building activities, the fun and the valuable education that summer camp life offers.

Many health organizations have special camps, called nutrition camps, for under-nourished children. Here the child leads an out-door life under careful supervision and is given nourishing food. The results to a child from a stay in one of these camps may be immeasurable. Special camps are also maintained for the tuberculous.

Grown people need camp life as well as children. A well-run summer camp is one of the best places for a restful vacation. Such a vacation can be enjoyed, however, only if the camper is equipped for it. Low-heeled, rubber-soled shoes, woolen stockings, a woolen shirt or middie and a sweater are some of the things that should go into a camper's trunk.

Camp life has one grave danger. Campers often forget that the same precautions must be taken at camp as at home regarding water, garbage disposal and sewage disposal. Outdoor life is healthful only when sanitary condi-

tions are healthful. An outdoor life in itself does not insure the body against polluted water or food.

The site of a camp should be high with good natural drainage. Impure water supply in camps has been responsible for a large number of cases of typhoid fever. Diarrhea and dysentery are also frequently caused by infected water. Lake or river water should never be used for drinking or in the kitchen, until it has first been purified by boiling or by disinfection. Water from a spring or a deep well may be used with safety, if care is taken to prevent surface impurities from draining into it. (See *Water* and *Privies*.)

The same precautions in regard to garbage and sewage should be taken in camp as at home. Garbage should be burned or buried. Sewage disposal in a camp is one of the most difficult problems. Often campers are living together in as close contact as in a good-sized town, and yet none of the facilities of a town for sewage disposal are present. Sewage must be prevented from dangerously polluting the soil, from infecting the water supply and from furnishing a breeding place for flies. (See *Sewage* and *Privies*.) The sanitary privy, *if properly cared for*, can be used in camps with safety. For the final disposal of camp sewage, trenches may be dug at a safe distance from the camp and the material may be buried. For a large permanent camp, a scientifically-constructed septic tank should be built.

CANCER

Cancer begins with a small growth or sore. It sometimes follows local injury or continued irritation. It may be external, frequently attacking the lips or tongue (especially of smokers), the breasts (of women), and parts of the face.

It may be internal, often attacking the stomach, liver, intestines and the female reproductive organs. Warts and moles sometimes develop into cancer and should be treated or removed by a physician, if they show signs of irritation.

Cancer may be compared to warfare. A certain group of cells seems to band together and declare war on the rest of the body. At first their army is not very strong and can be routed, but if not attacked immediately they grow so strong that they can overwhelm all the rest of the cells in the body.

It is generally agreed by physicians that cancer itself cannot be inherited. A weakened condition of certain tissues of the body may be inherited, and these tissues may therefore be more likely to fall prey to a cancerous growth. For example, a person may inherit a tendency to have stomach disorders. If these disorders are neglected and the stomach remains in a state of chronic irritation, he is much more likely to have cancer of the stomach than is a person who has a healthy stomach. It is also generally agreed that cancer cannot be caught by coming in contact with a cancer patient, although it is not absolutely certain that some forms of cancer are not in part at least of an infectious nature.

The prevention of cancer is a matter of not neglecting local irritations, especially when past forty years of age, for middle-age is the time of life when cancer is most likely to make an attack. Any kind of sore that refuses to heal or heals slowly should receive a physician's attention. Persistent indigestion should not be neglected. A hard lump in the breast of a woman is a danger signal. Another danger signal is increased discharge at time of menstruation, bleeding between menstrual periods or a return of menstruation

after change of life. Blood at any time in the urine, in case of a man, is a notification that he should lose no time in seeing a doctor.

If the first signals are heeded cancer may often be avoided. Rosenau * says:

"The Commission on Cancer of the Medical Society of the State of Pennsylvania found that 39 per cent. of the superficial cancers and 46 per cent. of the deep-seated cancers are preceded by a pre-cancerous condition or chronic irritation. In other words, in almost one-half of the patients that are sent to the surgeon with a fully-developed cancer there has been a previous condition which might have been removed and cancer might not have developed."

Medicine has no effect upon cancer. The only remedy is surgery *before* the growth has become large enough to be dangerous, although radium and X-ray have been found useful in certain cases. Records kept at Johns Hopkins Hospital for a period of 25 years show that when a woman with cancer of the breast applies so early that there is only a local lump her chances of cure are 70 per cent., while if she waits until the disease extends to the glands of the armpit her chances of cure are only 20 per cent.

Advice to those who would avoid cancer can be summed up as follows:

Have a medical examination every year.

Beware of sores that are slow to heal.

Consult a doctor if any suspicious lump appears or any unnatural discharge from internal organs occurs, or if there is indigestion that does not yield promptly to simple measures.

For years scientists have been endeavoring to discover

* "Preventive Medicine and Hygiene," by Milton J. Rosenau.

whether or not an infectious organism played a part in cancerous growth, in the hope that a serum or vaccine might be perfected to prevent and cure the disease. Recently public attention has been called to the discoveries made by Gye and Barnard of the National Institute of Medical Research in England of a virus believed to be a factor in a certain type of cancer in animals. It is hoped this work will lead to further knowledge concerning the growth of all cancer cells and perhaps to the perfecting of a cure. It will probably require years of study before this point will be reached.

In the meantime, for most cases early detection and prompt surgery are the only treatment that holds out hope of cure.

CARBOHYDRATES

(See *Diet.*)

CARBON MONOXIDE POISONING

This is now one of the commonest forms of gas poisoning. It is caused by a colorless and odorless gas which gives no warning of its presence. According to Rosenau,* deaths from carbon monoxide in large cities now exceed those from any other poison. Recently the newspapers have frequently recorded cases of people being overcome by gas and sometimes killed by leaving the motors of their automobiles running in the garage or some other enclosed place. In these cases, death is due to the carbon monoxide given off by the engine.

Often, in cases of severe carbon monoxide poisoning,

* "Preventive Medicine and Hygiene," by Milton J. Rosenau.

there are no warning signs previous to unconsciousness. Sometimes unconsciousness is preluded by throbbing in the head and feeling of weakness. Death follows if the patient is not taken into a different atmosphere at once and artificial respiration used. (See *Artificial Respiration*.) Even after the patient has recovered consciousness life may be in danger. He may also be in danger of serious after-effects, such as apoplexy, paralysis and other nervous conditions. Slow, gradual gas poisoning, in the opinion of some authorities, may also cause serious permanent injury.

Frequent causes of carbon monoxide poisoning are leaky gas fixtures, open coal fires and gases from stoves and furnaces. Men working in mines and at blast furnaces are likely to be exposed to this gas.

Workers in many other industries are also exposed to carbon monoxide in larger or smaller quantities. Among them are garage men, laundry workers, especially ironers, pressers in tailor shops (if using gas-irons), furnace tenders, gas workers (especially men making connections and reading meters, and men working at type melting kettles heated with gas), molders of metal and workers in canneries on soldering machines.

Many deaths every year are due to the careless use of gas cook stoves, to leaky gas tubing, to loose gas fixtures and valves, to furnace gas and to gas in stoves and water heaters if not properly adjusted and properly connected to flues. A gas burner should never be turned down low and allowed to burn all night.

Protection of the workers in industries where there is danger of this poison is a question of proper ventilation and of the use of devices to remove the gases. Pennsylvania and Illinois require coal mines to run ventilating fans

continuously night and day in mines where there is danger of poisonous gases. Several states require that a certain volume of pure air per miner be supplied in coal mines.

CARBUNCLES

(See *Boils.*)

CARPET SWEEPERS

(See *Home Hygiene.*)

CATARRH

(See *Colds.*)

CEREBROSPINAL FEVER

or

CEREBROSPINAL MENINGITIS

This disease is caused by a germ which attacks the tissues of the brain and spinal cord. It may occur sporadically or in epidemic form. It is spread through direct contact with a person having the disease and by well persons who act as carriers of the germs. More cases are probably caused by carriers than by direct infection. Cerebrospinal fever occurs more frequently in the fall and winter than at any other time of the year and attacks children and young adults more often than the middle-aged. An attack begins with convulsions, violent headache and high fever. Violent pain in the back of the neck and down the spine and rigidity of the spine develop. There is sometimes a rash on the face and body.

The patient should be isolated from everyone except the persons taking care of him, and nothing that he touches should be used by anyone else until it has been sterilized.

Those who must come into the sickroom should take care not unnecessarily to expose themselves to contact with the patient and should thoroughly disinfect their hands after handling the patient or any article the patient may have used. They may thus avoid carrying the disease to others. The most careful nursing and the best physician available is necessary for this disease.

The prevention of cerebrospinal fever is a matter of guarding against lowered bodily resistance and keeping the passages of the nose and throat, where the germ enters the body, in a healthy condition. The raw recruit in the army, weakened by forced marches, and the delicate child living in unwholesome surroundings are most likely to fall a prey to this disease.

A serum has been prepared and used with considerable success in treatment. Mortality from the disease is high, especially among children.

Other forms of meningitis may be caused by the germs of tuberculosis and other diseases. It may occur as a complication of pneumonia, typhoid, diphtheria, gonorrhea, etc., and in such cases adds to the fatality of these diseases.

CERTIFIED MILK

(See *Milk*.)

CHICKEN POX

The first signs of chicken pox are a mild fever and a rash. The rash consists of small raised pimples, which soon become filled with fluid and look like small pearls. The pimples come out in several crops over a period often as long as ten days. Little treatment is required except to keep the child quiet and protect the eruptions, particularly

those on the face. A child having chicken pox should be kept away from other children until all scabs have fallen off and the spots are completely healed. It is supposed that this disease is carried by the secretion contained in the eruptions, though the infectious organism has not been discovered. A physician should always be consulted, since occasionally chicken pox is confused with a mild case of smallpox.

CHILBLAINS

Chilblains are products of cold weather, poor circulation and insufficient clothing. They attack the skin of the hands and feet, causing swelling, redness, itching and pain. In bad cases the skin sometimes cracks, and blisters are formed. To prevent chilblains one should wear loose, warm clothing in cold weather, especially woolen stockings, heavy shoes, or overshoes over light shoes, and warm gloves. The wearing of tight, thin-soled slippers and thin stockings in very cold weather is a habit that is very friendly to chilblains.

Chilblains are often brought on by applying intense heat to the feet at once after they have become badly chilled. When the feet are numb and aching with cold, they should be bathed in cold water and rubbed with a coarse towel to restore circulation. In severe cases treatment by a physician is essential.

CHILD LABOR

The building of a body fitted to bear the strains of later life is the business of childhood and youth. To do this a well-balanced program of living is necessary—a program that includes rest, exercise that develops every part of the

body and joy-giving play. In many cases the body does not attain its full growth and full strength until a person reaches the age of twenty-one or over. When a child or youth uses one set of muscles over and over through an eight, nine or ten-hour day he develops lop-sidedly in some respect. If he stands or sits continuously in a faulty posture, a curved spine is likely to result. Carrying a heavy load of newspapers under one arm or on the back may cause the same defect. Stooping continuously over a bench before the lungs have reached their full development or working in a dusty atmosphere may weaken resistance to tuberculosis. The heart may be weakened or injured for life by too heavy work or too long hours of work in youth. Also serious stunting of growth may result from long hours of hard work before a child has reached full maturity. The child worker is inevitably a permanently cheated person.

In spite of all the progress that has been made in safeguarding the welfare of children and protecting them from disease much still remains to be done. There are seventeen states in which the 14-year age limit for factory and cannery work does not hold, according to the National Child Labor Committee. In six states laws are weakened by giving exemptions whenever the employment of the child seems needed by a dependent parent. Children are still practically unprotected by law in the field of agriculture. They stay out of school to work long hours on truck farms, in sugar beet fields, and on cotton plantations.

Out of 1,500 children fourteen and fifteen years old examined by physicians in twelve industries in Baltimore, 100 were found to have diseases or serious defects directly traceable to their occupation. The dangers of child labor are more serious because in a large number of occupations

no physical examination is given before the applicant is set to a task. In only thirty states and the District of Columbia is a physical examination required by law for children working in stores and factories.

An investigation of "The Health of the Working Child" made by the Bureau of Women in Industry of the New York State Department of Labor revealed that 93.6 per cent. of children studied had some defect, that 49 per cent. were engaging in occupations calculated to intensify their defects. Twenty-eight per cent. of these defects were judged to be directly accentuated by some requirement of the work. For example, a boy suffering from flat foot, as examination revealed, was running errands for a tailor. An overgrown, underweight girl, who should have been given very light work, was acting as relief sales girl in a department store, dispatched from one department to another when a special sale was on. In addition to a 48-hour week of this work she was attending night school ten hours a week.

Most child labor laws fix too young an age limit. The early teens is a period that taxes a boy's or girl's vitality heavily. Young people need to be relieved from excessive strain and tension during this period.

When boys and girls in their teens must leave school and go to work, special precautions are needed to insure that they work only under the best conditions and that they are physically fitted for the jobs to which they are set. (See *Posture, Health Service in Industry and Working Conditions Injurious to Health.*)

CHILDREN'S BUREAU, FEDERAL

The United States Children's Bureau is a branch of the Department of Labor. It was established in 1912 to "in-

investigate and report upon all matters pertaining to the welfare of children and child life among all classes of our people." It concerns itself especially with infant health, the birth rate, the infant mortality rate, orphaned children, deserted children, employment of children, dangerous occupations in which children are engaged, accidents and diseases of children, employment and legislation affecting children in the several states and territories and the administration of the Sheppard-Towner Maternity and Infancy Act.

An idea of the varied and valuable work the Bureau is doing is gained by examining the following list of its activities during the fiscal year 1925:

Administration of the Federal Maternity and Infancy Act in coöperation with 43 states and Hawaii; a study of maternal mortality in the United States and certain foreign countries; a three-year demonstration in the eradication of rickets among babies in a New Haven district; a two-year study of posture among preschool and school children and its relation to physical fitness; a bibliography on the growth and development of the normal child; a study of community provision for the recreational needs of the adolescent boy and girl; a survey of provisions in behalf of crippled children in eight states; a bulletin for mothers on child management; a state-wide study of child welfare in New Jersey; studies of child labor in rural districts and in canneries; studies of street trades and industrial home work; a study of industrial accidents to employed minors in Massachusetts, New Jersey, and Wisconsin; a study of vocational opportunities for minors of subnormal mentality; studies of mothers' pension laws in eight states and one Canadian province, of county child welfare work in several states, of

dependent and delinquent children in a number of states, of the care of illegitimate children, of adoption laws in the United States, and of the development of domestic relations or family courts. Current statistics as to children were compiled, especially on juvenile courts and child labor. Continuing coöperation with state child welfare groups generally was maintained. The distribution of 1,148,421 Bureau publications, including approximately 600,000 of the four popular bulletins on prenatal, infant, and child care, and child management, and the answering of 115,823 letters were also reported.

CHILLS

(See *Colds* and *Malaria*.)

CHIROPRACTIC

The theory of chiropractic consists in the belief that disease results from pressure upon the nerves as they leave the spinal column. This pressure is supposed to be caused by the misplacement of the vertebrae.

Schools of chiropractic do not give their students training equal to that of standard medical schools, which usually is four years. Some chiropractic schools graduate their students in six months. Some give a course lasting a year. In other schools the course covers two years, a six months' term being given each year, while the changes in the curricula of the chiropractic schools tend to elevate the standards. In many states chiropractors have come in conflict with the state laws which permit no one to practice medicine without a certificate from the state medical licensing board. In other states they are practicing under a special license. The tendency in certain states toward the estab-

lishment of separate registration and licensing boards is considered by many a dangerous one.

The theory of chiropractic has not been established and endorsed by men of standing in the medical and scientific world. In commenting on chiropractic, Frothingham * sums up the present situation as follows: "It seems fair to conclude from the existing established facts in regard to chiropractic that there is no reason to consider that it will ever replace the general science of medicine; that there is some doubt of its being of any value and that at the most it can be looked upon only as another possible therapeutic agent to be used for the relieving of human suffering in a limited number of cases." He warns the public that it should be very intolerant of any one who attempts to practice healing without a general knowledge of the established facts in medicine.

It would seem to stand to reason that a person cannot learn in a period shorter than that covered by the regular medical schools enough about the intricate mechanism of the human body to make him an expert healer and one into whose hands it is safe to entrust one's health.

CHOLERA

The primary home of cholera is India. It is one of the diseases that immigration officials are on the lookout for when ships come to the United States from Asiatic ports. Cholera is caused by a germ (the *comma bacillus*) and is carried like typhoid by the excreta of human beings, which may pollute food and water supplies, and by direct contact with a person who has the disease. It is chiefly water

* "Osteopathy, Chiropractic and the Medical Profession," by Channing Frothingham, *Atlantic Monthly*, July, 1922.

borne. It may be mild, differing little from the symptoms of ordinary diarrhea, or it may be extremely severe, the patient dying within a few hours. Cholera begins with an apparently simple diarrhea, which within a day or two or even within an hour or two may become violent. As the disease progresses severe cramps occur in the feet and calves of the legs and sometimes in the hands and arms; vomiting follows. There is a burning sensation in the stomach and thirst is unquenchable.

During the prevalence of an epidemic of cholera or while in the vicinity of ports on the Indian coast where the disease is epidemic, every case of mild diarrhea or irritable stomach should receive careful attention. Constant care and strict isolation are necessary in the treatment of this disease. The nurse should, if possible, wear rubber gloves and special care should be taken to disinfect the stools of the patient. Cholera, like bubonic plague, yellow fever and typhoid fever, is one of the diseases that modern sanitation can conquer. It has been brought to the United States several times but has been strictly controlled. In the Philippine Islands it prevailed for years, but it is now under control due to modern methods of sanitation. Isolation of the sick, disinfection of discharges and protection of water supplies from infection are the chief measures of control and prevention.

CHOREA

(See *St. Vitus Dance*.)

CHRISTIAN SCIENCE

The attitude of Christian Science toward disease is set forth in "Science and Health" by Mary Baker G. Eddy as follows: "Man is never sick, for mind is not sick and

matter cannot be." "It is well to be calm in sickness; to be hopeful is still better; but to understand that sickness is not real and that truth can destroy its seeming reality is best of all."

Thus, according to the Christian Scientist disease of any kind is merely an error of the mind and can be cured only by curing the mental error. He denies the germ theory and believes diseases cannot be communicated from one person to another except by one person suggesting them to another. Dr. Charles Reynolds Brown, Dean of the Divinity School at Yale University, with respect to Christian Science says that it is unscientific in that it refuses competent diagnosis and undertakes to deal with all kinds of disease in the same way. He says that it is misleading in that it teaches its people to disregard sanitary and hygienic measures. It asserts that all disease is merely an illusion of mortal mind and has no basis in the destruction of tissue or other scientific changes which are as a matter of fact susceptible of scientific demonstration. It advocates a system which tells little children, suffering from scarlet fever or malignant diphtheria, that there is nothing the matter with them and that they may go out and play with other children or go to school. It tells men and women fighting the ravages of Bright's disease or cancer or tuberculosis of the lungs that their sufferings are mere illusions of the mind.

CIRCULATION

(See *Arteriosclerosis*.)

CIRRHOSIS OF THE LIVER

In this disease the liver becomes inflamed and the blood vessels of the liver distended. As the disease progresses,

a fibrous tissue is formed which gradually replaces the true functioning tissues of the liver. Among the causes of cirrhosis of the liver are chronic poisonings (including alcohol, chronic intestinal and other infections).

The disease progresses very slowly, a person often having it for years without realizing it, and is characterized by gastro-intestinal disorders. In the later stages swelling of the abdomen and legs may occur. Frequently it is necessary to tap the abdomen at intervals and draw off the fluid that may accumulate in the peritoneal cavity.

Cirrhosis of the liver can usually be prevented by proper living. It is possible to arrest the disease in the early stages by correcting over indulgence in food and drink, or by eliminating chronic infections. The services of a physician are essential.

CLIMATE AND HEALTH

Change of climate is an oft-prescribed remedy. Asthma, arthritis, bronchitis, heart disease, hay fever and tuberculosis are among the diseases most frequently calling forth this prescription. Sometimes the value of a change in climate consists simply in enabling the patient to be outdoors and in the sunshine a larger part of the time. Often the elderly and frail are sent South in the winter for this reason. Or the change may be for the purpose of making it easier for the body engine to do its work.

In health, the body temperature of an adult remains constantly at about 98.5 degrees F. Cold does not lower it or heat raise it as long as the regulating apparatus works properly. This apparatus consists of: first, the sweat glands which cool the skin; second, the blood vessels of the skin which contract to send the blood inward when chilled and

expand to hold more blood at the surface when heated. A healthy person can accommodate himself to extremes of temperature. His circulatory system adapts itself quickly to different demands. But when a person is in ill health, adaptation is more difficult. In a cold climate the heart and blood vessels must be constantly sending warm blood to the surface of the body to keep it warm. This blood may be needed in the stomach for digesting food, or it may be needed in the lungs or some other organ to fight disease germs. Cold, damp air seems to favor diseases of the air passages and such disorders as neuralgia and neuritis. Air which is very warm and humid is equally taxing. The average person is especially uncomfortable on what is known as a "hot, muggy" day because the moisture in the air prevents the evaporation of perspiration necessary for keeping the surface of the body cool. A warm, moist, stagnant atmosphere may decrease power to assimilate food.

Cool, dry moving air is bracing. It stimulates deeper breathing and increased circulation and tends to make all the functions of the body more active. A change to such an atmosphere with the effect which altitude has upon the body, sometimes will hasten the cure of an illness. Other things being equal, the climate in which there are a large number of sunshiny days is more healthful than a cloudy atmosphere.

On the whole, however, adaptation to climate is largely an individual matter. Certain normal people feel best in one environment, others in another. It was once thought that tuberculosis patients had to be sent to a high dry place to get well. Some do best there, others not. We now know that about as many get well, with proper medical care, at the seaboard as in the mountains. The doctor must con-

sider the type and needs of each individual before recommending a change of climate, with all the travel, expense, breaking of normal ties, etc., that this usually involves. In general, it can be said that the good effect of the best climate can be counterbalanced by undue strain of body, mind and purse.

CLINICS AND DISPENSARIES

The first dispensary was established in London in 1696. A terrific epidemic of bubonic plague followed by the great fire left so much poverty and sickness in its wake that fifty-three physicians offered to give their services to the poor and contributed ten pounds apiece to provide medicines. From this simple beginning has developed the modern dispensary, which offers free or for a small fee the services of a series of specialists and all the necessary equipment for treating and preventing disease.

Time was when the family physician was consulted for everything. His equipment was inexpensive and he paid a low rent. Consequently his fees were low. To-day, a thorough diagnosis and treatment often involve the use of much expensive apparatus. Consider for example a person suffering from what he calls "rheumatism" in his joints. To be certain as to what is causing the trouble, it may be necessary to have the patient's teeth X-rayed, his blood and urine tested in a laboratory, the contents of his stomach analyzed. Treatment may require an electric baking machine, massage, extraction of teeth, removal of tonsils, supports for fallen arches or the use of a serum. While there is still a place, in fact a growing need for the general practitioner, in certain phases of medicine, yet the science of medicine has become so complex that no man can master

the whole field. To some extent, specialization is necessary. The more well-to-do patient suffering from rheumatic pains can afford to go to a series of specialists, a throat specialist for his tonsils, an X-ray laboratory, an orthopedist, etc. But for the average person the cost of this service is too great. Dispensaries have risen to fill the need of bringing expert scientific treatment to those who could not otherwise secure it.

The early dispensary provided merely the advice of one physician and necessary medicines. The modern dispensary, like the modern profession of medicine, specializes. Its services are divided into different departments, presided over by specialists. For example, if the patient has tuberculosis, he is asked to come at a certain hour to the tuberculosis clinic. Babies are brought at a definite time to a baby clinic. Dentists come in at certain hours to examine or treat the teeth.

There are as many kinds of clinics as there are special needs in the field of health; baby clinics, pre-natal clinics, clinics for children, clinics for children of pre-school age, school clinics, dental clinics, industrial clinics, mental hygiene clinics, cardiac clinics and clinics for various other groups of diseases.

To a large extent clinics treating the sick are now affiliated with hospitals and are known as out-patient departments, the hospital being thus able to treat all kinds and stages of disease instead of only those which confine a patient to bed. Certain specialties have their own divisions in the out-patient department.

Clinics unattached to hospitals are more and more coming to deal with preventive work rather than with the care

of disease. Altogether over 4,000 clinics now exist in the United States. In 1900 there were only about 150.

Formerly, dispensaries and clinics were regarded as charitable organizations for the very poor. Within recent years they have begun to reach out to a large group of people who can afford to pay for medical attention but cannot pay large fees.

The pioneer pay clinic, in which the physicians were salaried and the patient paid the cost, was an eye clinic opened by the Boston Dispensary in 1913. Since then, several hospitals in the larger cities have established special pay clinics for those who can afford fees approximating cost of service. In 1921 the medical school of Cornell University opened in New York a clinic devoted exclusively to the needs of this group. The clinic has served an average of 20,000 people a year, at an average cost per patient of \$6.53. An admission fee is charged for everyone, and special service is furnished at low rates. A special health clinic gives thorough general examinations in the interest of keeping people well. A series of comparisons made in a report for 1921-1924 shows how great is the saving to the patient. For example, treatment for a fractured arm, including 12 visits to the clinic, X-ray pictures, baking and massage, cost the patient \$37.50, which is less of course than would have been the case if the patient could have afforded to visit a private physician. The Cornell Clinic has demonstrated two things: First, that there is a heavy demand for a pay clinic; second, that such a clinic, when serving large numbers, can offer the services of experts and the best of equipment at reasonable rates and still be self-supporting. (See *Dental Clinics, Health Service in Industry, Infant Mortality, Mental Health (for Mental Hygiene*

Clinics), *Pre-natal Care*, *School Clinics* and *Venereal Disease Clinics*.)

CLOTHING

The chief duty of clothes is to equalize the temperature between the body and the surrounding atmosphere. In cold weather clothing is needed that holds air in its meshes and absorbs perspiration from the body, such as wool material and furs. Summer clothing should permit the air to circulate freely through its meshes and should not absorb perspiration, but allow it to evaporate and help cool the body.

If one does not dress warmly enough in cold weather, the body heat is called upon in excess to warm the surface of the body. This is why a person who goes out on a cold day in a thin coat and thin silk stockings is likely to come home exhausted, while one who is dressed in heavy wool coat and woolen stockings comes back glowing and invigorated.

The body cannot do its work well when it is losing heat in too large quantities. Even if one does not feel at the time the effects of wearing too thin clothing, he may be laying the foundations for future ill health. Babies, children, and old people often need to wear woolen underwear in cold weather. Everyone should wear a heavy wool or fur coat, warm stockings (not short socks) and overshoes when going out in extreme wintry and snowy weather, if he wishes to keep well and strong.

Clothing that is tight in any place interferes with one of the most important functions of the body—the circulation. A woman's clothing should be supported by the shoulders rather than the hips. If she wears a corset it

should be low, lightly boned and flexible. Clothing drawn tight across the chest and collars which constrict the blood vessels at the neck are to be avoided. A man who wears a belt to support his trousers should not draw it in tightly at the waist but should wear it low, just above the hip bones.

Many people wonder why they "have so much trouble with their feet." They may keep them hammering about all day on pavements and hardwood floors in shoes that squeeze them or throw the weight of the body on the wrong place. Still they wonder why their poor feet complain. It stands to reason that at best a foot has a hard time under conditions of modern life. It was made to go without covering or with very loose covering and to walk on soft earth. The least we can do for our feet is to fit them to shoes that keep them as nearly as possible in a normal position, that do not bind them and that distribute the weight of the body evenly. Narrow-toed shoes squeeze the toes together and frequently cause bunions and corns.* High heels throw the weight of the body forward, thus placing a severe strain on the arch. Many cases of painful, fallen arches are the result of wearing high-heeled shoes continually. (See *Fallen Arches*.)

The hygiene of clothing is not only a matter of weight and fit but also a matter of cleanliness. Underclothing should be washed frequently and should be well aired every night. Clothing worn by a person who has a contagious disease must be kept separate from clothing worn by the rest of the family and sterilized by boiling. Where the

* Careless treatment of corns and bunions may lead to painful and serious foot troubles. The advice of a physician should be sought when cutting or other treatment is necessary.

washing is sent to a laundry, it is wise to see that it is washed under sanitary conditions.

Hygienic clothing for children is of the greatest importance. It must allow complete freedom of action and must not bind or chafe. All clothing should hang from the shoulders, never from the waistline. The best type of garters are those that have straps from the shoulders.

Rompers for little children and bloomer suits and bloomer dresses for older children are comfortable and sensible. When bloomers are separate from the dress, they should be supported from the shoulders.

Insufficient clothing may be one of the factors in malnutrition by causing the body to lose the heat it needs to take care of digestion and other body processes. In the same way it may be an indirect factor in colds, pneumonia and other serious troubles. The fashion of dressing children in short socks in cold weather is condemned by some health authorities. As the blood vessels come very close to the surface of the skin beneath the knee, much body heat may be lost by leaving the knees uncovered in cold weather.

A child who is dressed too warmly is also losing valuable vitality. Children who live and go to school in steam-heated buildings are often more comfortable if they wear cotton dresses throughout the year, putting on warm outer wraps, of course, when they go out of doors in cold weather. The same thing often applies to adult workers in overheated offices and factories.

Baker * makes the following suggestions about shoes:

"For the child under two years, sandals or moccasins are the best type of footwear. They should not have any

* "Healthy Children," by Dr. S. Josephine Baker.

rough seams on the inside, and should be made with soft soles and no heels. After two years of age, the shoes may have a thin, lightweight, flexible sole, but heels should not be allowed until the child is at least ten years of age. Shoes for young children should always be of soft material and sufficiently large to allow the foot full and easy movement. The size should be at least one inch longer and half an inch wider than the foot. The toes should be broad and square. Except in cold weather, children should wear low shoes. In winter, high shoes are advised, and may be either buttoned or laced. They should never be stiffened at the ankles, unless on a physician's advice. As children grow older and their play becomes more vigorous, a heavier type of shoe may be necessary, but the principle of no heels, no stiffening in the tops and sufficient length and breadth must be adhered to. For outdoor wear, rubbers or arctics must be provided for wet and cold weather. It is most important that the child's feet should not be wet, and they should always be examined when the child comes indoors, and shoes and stockings changed at once, if necessary."

COCAINE

(See *Narcotic Drugs.*)

COCKROACHES

(See *Vermis.*)

COLD AIR TREATMENT

(See *Home Nursing.*)

COLD COMPRESS

(See *Home Nursing.*)

COLD SORES OR FEVER BLISTERS

A "cold sore" is a red blistery sore, usually appearing around the lips or nose. These sores often develop during or following a cold, influenza, pneumonia and other diseases accompanied by a high fever. They are not "catching."

It is important to avoid picking at the blisters with the fingers or touching them with anything that has not been sterilized. When the sores first appear they can often be dried up by applying alcohol. In the blistery stage a drying powder, such as boracic acid or bicarbonate of soda, is the best remedy.

Frequently-recurring cold sores should receive the attention of a physician.

COLDS

Figures collected from schools and industries show that colds take more money out of the workers' pockets and keep more children out of school than any other disease. Furthermore, a neglected cold is a frequent cause of pneumonia.

A cold may be caught in two ways. First: One may inhale or swallow the cold germ from direct contact with a person who has a cold, or from dry sputum, or by using dishes or other articles previously used by a person who has had a cold. Second: Sudden or prolonged chilling of the body or similar exposure may cause changes in the circulation and the blood vessels which produce congestion in the mucous membrane of the air passages in the respiratory tract, featured by symptoms of a cold.

A number of things may cause colds indirectly; the custom of overheating offices and houses, thus causing a person to feel chilled when he goes out on a cold day; the poor

ventilation of houses and places of business; an abnormally dry and dusty atmosphere, and the wearing of too little or too much clothing. All these things lower the resistance of the body to acute nose and throat infections.

Most colds are extremely contagious. This is apparent when one sees how quickly a cold will travel from one member of the family to another, or from one person in an office to another. Much could be done to lessen the frequency of colds if people would isolate themselves from others during the first few days, and if they would be scrupulously careful to cover the nose and mouth when sneezing and coughing in public places, and equally careful not to spit in public places. Protection of others from infection is all the more important, since some of the serious contagious diseases start with symptoms of a cold, as for example diphtheria, influenza, measles, scarlet fever, small-pox and whooping cough.

A cold in its first stage can often be checked by taking a cathartic, such as castor oil, taking a hot drink and a hot bath before going to bed and keeping warm in bed for a day. If a cold does not yield promptly to simple remedies, a physician should always be consulted. Cold medicines should not be taken except by the physician's orders, since many of the medicines on the market contain harmful drugs. It is unwise to neglect even a slight cold. A neglected cold may lead to influenza, pneumonia, infection of the ear, mastoiditis (infection in the bony cavities back of the ear) and infection of the sinuses of the face.

A person who takes cold easily either from exposure to the germ, or from chilling, should look to his habits of living, and try to increase his powers of resistance. In children, frequent colds are often found to be due to a diseased

condition of the tonsils, or to adenoids. If a child is continuously having colds, one after another, or seems to have a chronic infection of the nose, he should be examined at once to see if there is any underlying cause. The following rules sum up the advice of physicians on how to keep from taking colds:

(1) Stay away from people with colds. Especially during "flu" epidemics, it is wiser to stay at home alone than unnecessarily to be part of a crowd in a poorly-ventilated room or meeting-place.

(2) Keep your body built up by eating nourishing food (not overeating sweets), sleeping eight hours if possible, exercising outdoors every day and drinking at least six glasses of water daily.

(3) Train your skin to stand change in temperature by frequent bathing. Bathing with water cool enough that a healthy glow is felt after the rub-down is particularly good for hardening the skin. If cold water is too much of a shock at first, the temperature can be lowered a little each day. Sponging the neck and chest with cold water before dressing in the morning and rubbing well with a rough towel are helpful if an entire bath cannot be taken.

(4) Do not over-dress or under-dress. Wear enough clothes to be comfortable. In this day of over-heated houses, offices and shops it is better to put on extra wraps when going outdoors than to wear heavy underwear all the time. Winter shoes should have thick soles, and rubbers should be worn on rainy days. Wool stockings in cold weather are both comfortable and sensible.

(5) Breathe through your nose. Air is filtered as it passes along the nasal passages on its way to the lungs. The mouth-breather takes germs directly into his throat.

74 A POPULAR ENCYCLOPEDIA OF HEALTH

If colds persist see a physician, for you may have growths in your nose which keep you from breathing properly.

(6) Have diseased tonsils, adenoids or bad teeth treated or removed.

(7) Wash your hands well before eating and brush your teeth at least twice a day.

(8) Live and work in well-ventilated rooms. It is better for the thermometer to read 68° than over 70° . Overheated rooms cause more colds than under-heated. Windows should be opened at least twice a day, even during the winter, for complete change of air. If there is dust or fumes where you work, wear a mask if possible—at least “sweep out” your lungs with fresh air for a few moments at your lunch hour, or when walking part of the way to and from work. Keep in the sunlight as much as possible.

(9) Sleep with open windows—in winter as well as summer. It is not enough that air should be cold—it must be fresh.

(10) Keep your feet dry. An extra pair of shoes and hose kept at your place of work will add to your health and comfort when you are caught without rubbers. Rubbing the feet briskly with a rough towel will help you keep from taking cold from wet feet.

(11) Cool off gradually, if you are warm or wet with perspiration. An electric fan or a cool breeze often starts a cold.

(12) Consult a physician if you keep on having colds in spite of taking care of yourself. If you take cold often or have a cold that hangs on, your health needs watching.

Bronchitis: The bronchial tubes look like a tree turned upside down, the windpipe being the trunk. From the windpipe, branch the two main bronchial tubes which lead to

the lungs. These divide again and again like the branches and twigs of a tree until they reach all parts of the lungs. Bronchitis is an inflammation of the lining of these tubes. It begins as a rule with the usual symptoms of a cold in the nose or throat. As the bronchial tubes become affected, there develops soreness in the chest and a persistent cough.

When the inflammation remains in the larger tubes the disease is not serious, but when the smaller branches are inflamed the air makes its way through to the lungs only with great difficulty. In severe cases of bronchitis, as in pneumonia, the patient may die because he is unable to get air enough into his lungs. Sometimes the lung tissue becomes infected from the inflamed tubes and pneumonia develops.

A person suffering from bronchitis should be kept warm in bed and should have the prompt attention of a physician.

Chronic bronchitis may precede the development of more serious affections, such as tuberculosis, if it is neglected. A person who is subject to bronchitis should take measures to build up his general health and never neglect a cold.

Laryngitis: Laryngitis is a cold that affects the voice box, or larynx. It may result from a neglected cold in the head or may develop without preliminary symptoms in the larynx itself, sometimes as a result of tiring the voice. Singers and public speakers are especially likely to have laryngitis. The best treatment is usually a cathartic, rest in bed and complete rest for the voice.

•*Catarrh:* Catarrh is a chronic cold in the nose and throat. It may be due to adenoids, to some obstruction in the nose, to faulty construction of the nose, to a damp climate or to other causes.

COLIC OF INFANTS

The position of a child with colic is characteristic. It lies crying with its knees drawn up and the thighs flexed on the abdomen. Colic is due to gas in the bowels caused by indigestion. The object of treatment is to help the baby expel the gas, quiet the pain, and cure the indigestion. Gas may be expelled by gentle massage, placing one hand on the right side of the abdomen, passing the hand slowly straight across from right to left and down on the left side. These movements should be kept up until their purpose is accomplished. If the pain is very great, two pieces of flannel wrung out of hot water and applied alternately as nearly continuously as possible will give relief. Before applying, rub the abdomen with vaseline, so as not to burn the tender skin. Afterward the abdomen should be covered with a generous piece of dry flannel or absorbent cotton. If this does not succeed, try a small rectal injection of salt and warm water (one-third teaspoonful of salt to half a glass of warm water). A laxative, and none is better than castor oil, is needed to complete the cure. The pain of colic comes in paroxysms, and is lessened rather than increased by pressure.

CONJUNCTIVITIS

(See *Eyes*.)

CONSTIPATION

Constipation has been called the "mother of ills." Many serious illnesses may be traced to neglect of this condition.

The person who suffers from chronic constipation is continually tired, because his system is continually being poisoned. The frequent use of laxatives is inadvisable, since

they weaken the muscles and nerves of the bowels and thus make the patient dependent on drugs for relief.

In most cases constipation readily yields to a change in diet which includes more bulky foods. Foods which are useful in correcting constipation are bran, graham and whole-wheat bread, fibrous vegetables such as spinach, string beans, cabbage, etc., and dried and fresh fruits. Six to eight glasses of water should be drunk every day. Special exercises affecting the abdominal muscles taken night and morning are also beneficial, when directed by a physician.

It is especially important to form the habit of going to the toilet at a regular time each day.

For severe constipation the best treatment sometimes is to soften the contents of the intestine by the use of an enema, which is the injection of warm water into the rectum. However, the habitual use of enemas is harmful; they should be taken only on the advice of a physician. Mineral oil is sometimes recommended as a harmless remedy, since it is not absorbed by the intestines but simply acts as a lubricant.

CONSUMPTION

(See *Tuberculosis*.)

CONVALESCENT SERUM

(See *Measles*.)

CONVULSIONS

(See *Epilepsy*.)

CONVULSIONS OF INFANTS

Infant convulsions are often preceded by moaning during sleep and by muscular twitchings. The eyes may have an unnatural look.

78 A POPULAR ENCYCLOPEDIA OF HEALTH

Give a dose of castor oil or a rectal injection of salt and warm water, or both, if these symptoms are noticed.

Should a convulsion occur, call a physician, but while waiting for him, place the child in a warm bath, in which a teaspoonful of mustard has been dissolved. Keep the child in the bath for ten or fifteen minutes. Apply a cold wet cloth or ice-cap to the head during this time.

Unless castor oil or an injection has been given just before the convulsion, give both after the bath. Then place the child in a warm bed in a quiet place, and it will probably soon drop off into a restful sleep.

CORNS

(See *Clothing*.)

CORRECTIVE EXERCISES

(See *Exercise*.)

CORSETS

(See *Clothing*.)

COSMETICS

Pure cold creams, talcum powders and rice powders are harmless. But it is necessary to discriminate carefully among preparations sold as "aids to beauty," for many are irritating to the skin and even dangerous. Preparations are advertised to work positive miracles with face and figure, to remove wrinkles, to remove the heaviest growth of hair, to grow hair on a shiny bald dome, to bleach skin, etc. Beauty contest winners and movie actresses are frequently induced to indorse obviously extravagant claims for lotions and creams they know nothing about.

Searchers after beauty should not try advertised cures for moles, growth of hair, freckles and other facial blemishes without consulting a reputable physician, well trained in that line. Some of the methods used by so-called "beauty specialists" are dangerous. One should be especially cautious in trying hair dyes on hearsay and should look askance on face enamels and on preparations that claim to remove wrinkles or bleach the skin.

There is no law compelling manufacturers of face powders, rouges, hair dyes and other cosmetics to advertise any poisonous or irritating chemicals. They may be compounded of extremely poisonous minerals, such as lead, arsenic and mercury. Cases of severe lead poisoning have been caused by certain hair tonics and face creams. Cole * reports seeing "a woman with an extensive diffuse inflammation of the head, face, ears and neck, the eyes being swollen shut" due to having had her hair dyed with a preparation containing lead acetate. Even more dangerous than lead is a drug called paraphenylendiamin used in some hair tonics and occasionally in other cosmetics.

Mercury is another dangerous substance used sometimes in hair dyes, face creams and skin bleaches. Even so dangerous a substance as arsenic has been found in hair tonics.

Powders sold as "rice powders" may contain any of a number of substances, including zinc oxide and bismuth. La Wall, chemist for the Food and Dairy Commission of Pennsylvania, on examining sixteen so-called rice powders, found only two to be pure. Certain rouges and lipsticks are colored with anilin dyes. "I think not a day passes that

* "The Dermatoses Due to Cosmetics," by H. N. Cole, M.D., *Journal A. M. A.*, June 14, 1924.

I do not see a case of dermatitis (skin eruption) which I can say definitely is due to cosmetics," said a Chicago doctor * recently.

Good health and scrupulous cleanliness in the care of the skin make extensive use of cosmetics unnecessary. A standard quality of cold cream massaged gently into the skin and then washed out with cool or lukewarm water helps to keep the pores from clogging. Cold water or ice stimulate circulation and tend to keep the flesh from becoming flabby. Only well-known brands of powders and rouges should ever be used. The skin that has been powdered and rouged should be washed with especial care at night. Pimples and red blotches are cured by hygienic living rather than by lotions.

COUNTY HEALTH DEPARTMENTS

(See *Health Officers*.)

CRAMPS

Cramps in the muscles are a common ailment. They are often the result of over-use of the muscles, as in swimming, or riding a horse. They may be a symptom of lead poisoning and, in the case of children, of intestinal worms. Painful cramps usually accompany St. Vitus dance. Ordinary cramps may, as a rule, be relieved by rubbing, or bathing in warm water.

CROUP

(See *Diphtheria*.)

CUTS

(See *Bleeding and Blood Poisoning*.)

* Dr. James Herbert Mitchell, *Journal A. M. A.*, June 27, 1925.

DEAFNESS

(See *Ear*.)

DEATHRATES

(See *Lengthening Life* and *Enriching Life*.)

DEMENTIA PRÆCOX

This is a form of insanity which we have heard much about of late years on the lips of social workers and in the newspapers in connection with youthful criminals. One reads of twenty-year-old boys who commit various crimes, such as stealing and other equally or less serious offenses, and forms of vagrancy. Investigation reveals that they may have had brilliant minds in earlier years but subsequently broke down nervously. Occasionally there is a history of a commitment to an insane asylum as a case of dementia præcox.

The disease usually comes on between the ages of fifteen and thirty, frequently during college years. A boy or girl who has been apparently normal previously begins to be restless and erratic. He may fail in his studies, may give up a job without reason, may gradually change from a mild, tractable person into one who always does the opposite to what is expected of him. Apparently the mind had the capabilities of developing only so far. The responsibilities of maturity seem to cause the mind to give way very much as the mind of an old person sometimes deteriorates.

Dementia præcox is seldom curable. It can probably in certain cases be prevented or modified by correcting mental habits in childhood, with the help of a psychiatrist or a mental hygiene clinic. (See *Mental Habits of Children* and *Clinics*.)

DENTAL CLINICS

In years gone by dentistry was a rather simple science. One went to a dentist when driven by severe toothache, and the pain was relieved by pulling out the offending tooth. To-day healthy teeth are recognized as one of the rock-bottom essentials of a healthy body. Hence, the dentist plays an important rôle in disease prevention.

The modern practice of dentistry is more expensive than the old. It involves more apparatus. Cheap dentistry is all too often careless dentistry, and careless dentistry is costly to health. Consequently the free or moderate fee dental clinic fills a definite need.

Dental clinics have been established in many instances as the result of school health examinations. When the doctor began to enter the schoolroom, he discovered an astounding number of children with neglected teeth. Ninety-eight out of every hundred first-grade children examined recently in New York City were found to have cavities in their sixth-year molars. This means that between the ages of five and eight these children's permanent teeth were impaired.

An examination of 6,768 first- and second-grade children in the city of Bridgeport, Connecticut, revealed shocking neglect. Less than 10% were brushing their teeth daily. There was an average of seven cavities per child, and 10% had open sores on their gums which were the outlets of root abscesses. Nearly 40% of the absences in public schools to-day are due to the teeth, according to Keyes.*

Realization of facts like these led to the endowment of

* "Mouth Hygiene in the Public Schools," by Frederick Keyes, from *Oral Hygiene*, March, 1918.

the Forsyth Dental Infirmary for children in Boston, Massachusetts, and the Dental Dispensary for the children of Rochester, New York. In 1914 the Board of Health of the city of Bridgeport, Connecticut, established an educational and preventive dental clinic for children in the first five grades of the public schools. The work of the Bridgeport Clinic is conducted by a staff of dental hygienists (persons trained in cleaning and care of teeth), who visit the schools with portable equipment and clean children's teeth, give classroom talks on care of teeth and conduct tooth-brush drills. A central dental clinic is maintained for treating decayed and diseased teeth.

McDowell County, West Virginia, established nine years ago the first county-wide free dental clinic in this country. Every child in every school in the county has his teeth examined, cleaned and treated once a year. For this work permanent dental outfits are set up in the larger graded schools and portable outfits are supplied for the country schools. This service is supported by a five-cent tax per \$100 of taxable property and is regarded as a regular and necessary part of school expenses.

A report issued in 1924 showed New York City to have 104 dental clinics, exclusive of industrial dental clinics. Thirty-three of these clinics are for children.

Dentists are a part of the staff of many municipal health departments. Of 86 cities included in a health survey made by the American Child Health Association in 1925, 16 employed dentists.

The important place dental hygiene is assuming in modern medicine is evidenced by the work being done at Bellevue Hospital and the Presbyterian Hospital in New York City. At both hospitals each ward patient, whose condition

84 A POPULAR ENCYCLOPEDIA OF HEALTH

permits, receives a thorough cleaning of his teeth, temporary fillings for decayed teeth and any dental surgery necessary to improve his general health.

Dental clinics are now included in the health work of many industries. (See *Clinics*.)

DIABETES

The cause of diabetes is unknown, but it is a well-known fact that it occurs more frequently in fat people who take little exercise and who overeat, particularly sweet foods. Joslin * states that the overweight person is at least twice, and at some ages, forty times as likely to have the disease.

Diabetes occurs at all ages of life. In children, it occurs less frequently and is likely to be acute, and without treatment is always fatal. In middle age, it is frequently associated with bad teeth, especially if there is pyorrhœa or abscesses. It may also be associated with localized infections, such as chronic appendicitis or inflammation of the gall bladder. In old age, it is usually more chronic and is more easily controlled by diet.

Some of the common symptoms which occur early in the disease are: increased thirst, increase in quantity of urine, increased hunger. Although large quantities of water are necessary to quench the thirst, the mouth feels dry. The patient may have to rise frequently at night to empty the bladder; and in children bed-wetting is often the first symptom. Despite the large quantities of food taken, there is weakness and progressive loss of weight.

Two important factors in preventing diabetes are to keep the weight down to normal and to have regular medical ex-

* "The Prevention of Diabetes Mellitus," by Elliot P. Joslin, published by American Medical Association.

aminations, including urine analysis. Infections of teeth, tonsils, gall bladder and appendix and chronic constipation should be attended to immediately, as diabetes is frequently associated with these conditions. Often the disease may be detected by the presence of sugar in the urine before other signs appear. Sugar in the urine indicates that the body cannot take care of all the sugar it is receiving in the diet, and is thus obliged to rid itself of some by this method of elimination.

If taken in time, diabetes in many cases, even before the discovery of insulin, was controllable by strict regulation of the diet, especially when the patient was middle-aged or past middle age. Treatment, of course, required careful medical direction.

Recently, with the discovery of insulin, great advances have been made in the treatment of the disease. Insulin is an extract of certain cells in the pancreas, which has the power when injected into the body to enable it temporarily to burn more sugar. While still somewhat in an experimental state, this treatment has already been used with success in thousands of cases. Insulin makes it possible for a person with diabetes to eat enough carbohydrates to keep up his strength without increasing the excess of sugar in his system. While it is perhaps not a cure for the disease, it insures freedom from distressing symptoms and promises in the majority of cases indefinitely to postpone death from this cause.

DIARRHEA AND DYSENTERY

Diarrhea is most serious when it attacks babies and old people. It is still one of the causes of many infant deaths,

though improvements in milk supplies, in infant feeding and in the education of mothers have greatly lessened its seriousness as a cause of death. A simple form of diarrhea may be brought on by overeating or eating indigestible food. This form usually yields quickly to a liquid diet and castor oil. The more serious form of diarrhea is due to a germ taken into the stomach in water, milk or other food. It is most common in hot weather, because heat is favorable to the growth of bacteria in milk; hence, the term "summer complaint" that is often used. This is one of the diseases that frequently attends a vacation spent in the country or at a resort where proper precautions are not taken in regard to water and milk. Overeating or eating foods that are hard to digest in hot weather predisposes to diarrhea by weakening the resistance of the stomach and intestines to the germs.

The best way to avoid diarrhea is to eat light, easily digested foods in hot weather and be sure the milk and water supplies are safe. These precautions are especially necessary in the case of babies. A breast-fed baby almost never has infective diarrhea.

Treatment for diarrhea should be prompt and medical advice should be secured at once, for a mild form may dangerously weaken a child or old person and may develop into inflammatory diarrhea. A dose of castor oil taken at the very beginning of an attack often prevents the disease from getting under way.

Dysentery in its commonest form is a severe and special form of inflammatory diarrhea. The movements are more painful than in diarrhea and consist wholly or in part of mucous and blood. Dysentery occurs more frequently in tropical countries than in the temperate regions and is caused

by a germ known as the dysentery bacillus, which possibly is carried by milk or water.

A kind of dysentery, known as amebic dysentery, is caused by another parasite. This form is likely to start more mildly than bacillary dysentery and has a tendency to become chronic. It may lead to ulcers of the intestines and abscesses of the liver. It is communicated through food and water supplies and commonly by contact with persons who are carriers of the amebæ.

Diarrhea and dysentery may be prevented by the same methods that are used to fight typhoid. They should be included among the diseases that must be reported to the board of health. The utmost care should always be taken to disinfect the stools of the patient and the dishes used by him. (See *Milk* and *Water*.)

DICK TEST

(See *Scarlet Fever*.)

DIET

The housewife who plans or cooks three meals a day for a family is doing one of the most important jobs the world has to offer. There is an oft-repeated saying that "man digs his grave with his teeth," meaning that he shortens his life by over-eating or by eating the wrong kind of food. One might say just as truly that man lengthens his life with his teeth, since health and joy of living depend in a large measure on eating the kind of food one's body needs. Food is body fuel, just as coal or oil is fuel for an engine. The machinery of the body cannot run smoothly

88 A POPULAR ENCYCLOPEDIA OF HEALTH

unless it has the right fuel. There are three kinds of food that the body must have:

- (1) Tissue building foods, or proteins.
- (2) Heat and energy producers, carbohydrates and fats.
- (3) Mineral salts which build bones and keep the blood in good condition and regulate processes in all the tissues and fluids of the body.

Milk, eggs, cheese, meat, fish, dry beans, peas, lentils and nuts are the chief sources of protein. The starchy foods, such as bread, potatoes and cereals; fats, such as fat meat, cream, olive oil, and butter, and sugar are the energy givers. Mineral salts are found in milk, meat, vegetables, fruits and in whole-wheat breads and especially cereals when made from the whole grain. Some of the most important of these salts are iron, calcium, phosphorus. Often people take tonic medicines to supply these minerals, which they might better get by choosing their food wisely.

We all need these several kinds of food, but the proportion of each we should have in our daily fare differs. A growing child needs relatively more tissue-building food than a grown person. If a middle-aged person eats a large quantity of tissue-building food, he is in a sense augmenting waste products not needed for tissue building. He thus may put a heavier strain on his digestive and eliminative organs. An old person needs even less food of this type.

A person who is doing hard manual labor or exercising vigorously every day needs much more energy-building food than a person who does little or no manual work. Thus, a lunch that would satisfy the needs of a stenographer would not do at all for a ditch digger or a carpenter.

In addition to the four groups of foods (proteins, fats,

carbohydrates and minerals) there are little known but very important substances, called vitamins, that every one must have to grow and keep well. The principal ones are Vitamin A, Vitamin B, Vitamin C and Vitamin D. The first, Vitamin A, is known as the fat soluble vitamin and is found in butter, cream, cheese, milk and eggs, green leaves of plants, such as lettuce, spinach, tomatoes and certain other vegetables and fruit such as oranges. This vitamin is important for growth and prevents xerophthalmia, a disease of the eyelids. It also protects against diseases of the respiratory tract. Vitamin B is distributed in food materials even more widely. It is found in vegetables and fruits, milk, eggs, whole grains, flour, liver, kidneys and sweetbreads. Lack of this vitamin causes certain types of neuritis, malnutrition, and a disease common in certain Asiatic countries, known as beriberi. (See *Beriberi*.) The presence of Vitamin C in the daily food prevents scurvy, a serious nutritional disease of adults and children, more common in infancy and early childhood. (See *Scurvy*.) Excellent sources of this vitamin are lemons, oranges, other citrus fruits, tomatoes, potatoes, cabbage and turnips, especially yellow turnips. This vitamin is reduced by heat (as in pasteurizing, cooking and canning) to one-half, one-fourth or even less of the original amount present in the raw product. Vitamin D, found in cod-liver oil and egg yolk, prevents rickets, a very common disease of infancy and early childhood. (See *Rickets*.)

Some of the commonest mistakes people make about eating are these:

1. Many people eat more meat than they need, especially people who do not live a very active life. Most of the same

qualities contained in meat are found in eggs, milk and cheese. These foods are often cheaper. People troubled with intestinal indigestion are often benefited by a change in diet, sometimes involving a reduction in meat consumption if they have been over-partial to that article of diet.

2. Most people do not drink enough milk. Milk is more valuable than any other food. Children must have it to keep well. It supplies nearly all the different substances the body needs, tissue-building food, energy-giving food, mineral salts and vitamins.

3. Most people eat too few green vegetables. Green vegetables help keep the body healthy in three ways: They supply minerals—iron, calcium, etc. They supply coarse, bulky material that prevents constipation. They supply vitamins. Incidentally green vegetables are the best kind of spring tonic a person can have.

4. Most people eat too concentrated foods. Wheat flour and polished rice are examples of highly concentrated foods. The white wheat flour we buy is made by removing all the rough husk of the grain and grinding the kernel very fine. The result is attractive to look at but not so complete a food as the darker flour made of the whole grain. In the same way rice with the husk left on is superior to rice which has been polished smooth and white. Every family should eat, at least part of the time, breads made from whole wheat, graham, and rye flour and cornmeal and the whole-grain cereals such as oatmeal, and whole wheat cereals.

5. Many people eat too many sweets. It should be remembered that candy and ice cream are foods with high energy value. When eaten between meals, as would be the case with other foods, they are likely to keep the digestive

organs hard at work when they should be given a rest. These foods are one of the most frequent causes of overweight.

There is one way to tell whether or not one is getting food in sufficient quantity, and that is by measuring it in terms of energy units or calories. A calorie is a measure of the amount of body heat food can give. For example, a pound of beef is reckoned as equal to 1357 calories, that is 1357 units of heat. By knowing the number of calories in two articles of food, one can tell which has the greater energy value and thus which is really the more economical. Experts have estimated the number of calories the average person needs in a day according to age and according to whether he lives an active or an inactive life. This number may vary for adult men from 2500 to 6000. Infants require from 900 to 1200. Calorie needs of children vary according to age. Experts have also figured out the number of calories in all the different foods. The calorie makes guesswork in feeding people unnecessary and raises cooking and planning of meals to the level of a fine art. Every housekeeper should know the actual food values she is giving her family. A good book to keep next to the cook book is "Feeding the Family," by Mary Swartz Rose. This contains menus for families, for people of different ages and different needs and tables of foods with their caloric values.

Calorie tables are invaluable to people who wish either to increase or decrease their weight. To decrease weight one must cut down the daily number of calories; to increase, one must have more calories.

Overweight. A person who carries around a load of excess flesh is placing himself at a great disadvantage in

life. He puts all his organs under a strain, thus weakening them and making himself an easy victim for disease. It is easier to prevent overweight than to reduce. Hence the first signs of "growing stout" should be met by cutting down calories and increasing exercise. Foods which are especially fattening are starches, sweets and fats. Meat, green vegetables and fruits are foods not apt to produce excess fat. Vigorous daily exercise is essential to keeping the body at its normal weight. *Under no conditions should a person attempt to reduce by taking reducing drugs without medical advice.* Diet regulation and exercise are the only safe methods.

Excess weight is sometimes due to failure on the part of the thyroid gland or one of the other ductless glands to function properly. This condition requires a physician's attention. (See *Glands and Glandular Therapy*.)

Several good books have been published which give directions for reducing by dieting, by model menus and by exercise.

One can gain some idea of what he should weigh by consulting standard height-weight tables.

Underweight. When a person falls much below the average weight for his age and height, he is likely to tire easily and to be an easy prey for disease germs. Underweight in the case of a mature person is not so serious as in case of a child or young person. The number of cases of tuberculosis could be noticeably decreased if more attention were paid to the underweight child.

In addition to choosing the kind of food the body needs, one should observe the following simple rules about eating:

1. Eat slowly.
2. Chew thoroughly.

3. Drink four to eight glasses of water a day.
4. Eat at regular hours.
5. Do not overload the stomach.
6. Eat different kinds of foods.
7. Leave all cares behind when you come to the table.

AVERAGE WEIGHTS OF MEN ACCORDING TO AGE AND HEIGHT

The following table is based on a study of about 200,000 men.

The average weights for women are a few pounds less.

HEIGHT (With shoes on)		WEIGHT IN POUNDS ACCORDING TO AGE (As ordinarily dressed)								
Feet	Inches	Age 20	Age 25	Age 30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
5	0	117	122	126	128	131	133	134	135	135
5	1	119	124	128	130	133	135	136	137	137
5	2	122	126	130	132	135	137	138	139	139
5	3	125	129	133	135	138	140	141	142	142
5	4	128	133	136	138	141	143	144	145	145
5	5	132	137	140	142	145	147	148	149	149
5	6	136	141	144	146	149	151	152	153	153
5	7	140	145	148	150	153	155	156	158	158
5	8	144	149	152	155	158	160	161	163	163
5	9	148	153	156	160	163	165	166	168	168
5	10	152	157	161	165	168	170	171	173	173
5	11	156	162	166	170	174	176	177	178	178
6	0	161	167	172	176	180	182	183	184	184
6	1	166	173	178	182	186	188	190	191	191
6	2	171	179	184	189	193	195	197	198	198

To calculate your normal weight, find your height in feet and inches in the left hand column, then follow that column to the right until you meet your age period at the top; there you will find your normal weight.
Example: 5 ft., 8 in., in the left hand column gives a normal weight of 155 pounds at age 35.

A GUIDE TO MEAL PLANNING

GROUP I

BODY-BUILDING FOODS

Foods which are valuable for Proteins

Poultry
Oysters
Milk
Custard
Cheese
Fish
Lean Meats
Cocoa (beverage)
Ice Cream
Eggs
Dried Beans, Peas
Nuts
Gelatine Dishes

Group I—Body-building foods contain materials for building and repairing body tissues. A comparatively large amount of these protein foods should be given to children, especially in the form of Milk. As one grows older he needs less of this kind of food. Meat is the first food that should be limited. Adults as well as children need some milk every day.

GROUP II

HEAT AND ENERGY GIVING FOODS

Foods which are valuable for

A—STARCH

Cereal Foods
Macaroni
Flour
Mixtures
Bread
Crackers
Rice
Tapioca
Potatoes

B—SUGAR

Sugar
Candy
Dried Fruits
Jellies
Honey
Preserves

C—FAT

Cream
Chocolate
Butter
Olive Oil
Lard
Bacon, or other animal fat
Other vegetable fats or oils

Group II—Heat and energy giving foods contain the energy or fuel materials needed to supplement foods in the other groups which themselves contain a certain amount of fuel. When the amount of food in the diet is to be cut down, these should be the first to be lessened in quantity. Most of these foods possess a high calorie value.

GROUP III

REGULATING FOODS

Foods which are valuable for Minerals and Vitamins

Spinach
Peas
Lettuce
String Beans
Tomatoes
Turnips
Carrots
Cabbage
Onions
Other Vegetables
Apples
Pears
Oranges
Grapefruit
Other fruit
Milk, Eggs, Butter and whole grains

Group III—Regulating foods keep the organs of our whole body working well. They should be eaten liberally in the diet. It will be noticed that Milk, Butter, Eggs and whole grains belong in all three groups. They are included in Group III on account of their regulating properties.

EVERY DAY'S MENU SHOULD CONTAIN SOME FOOD FROM EACH GROUP

Most people think too little about their food. But there are people who think too much about food. The person who is afraid to eat this or that and is always wondering if some food is going to hurt him is sure to be a dyspeptic. A good rule to follow is this: Choose the kind and amount of food a person leading the life you lead should eat. Then think no more about it. (See *Calories, Malnutrition, Marketing for Safe Food and Teeth.*)

DIGESTION

(See *Indigestion.*)

DILATATION OF THE HEART

(See *Heart.*)

DIPHTHERIA AND MEMBRANOUS CROUP

The disease is most common between the ages of one and five. It is rare after twenty. The early symptoms are sore throat and rise in temperature. The tonsils are usually red and swollen and often there are patches of a grayish membrane on the throat. Prompt treatment is of the utmost importance in this disease; hence a bad throat should always receive immediate attention from a physician. By taking a swab of the throat and by examining it in the laboratory, he can tell whether or not the diphtheria germs are present.

Diphtheria is very contagious, being carried from one person to another by the discharges from the nose and throat of the patient. It has also been carried by milk. A person who has had diphtheria should never be allowed to mingle with others until a physician has made an examination of the nose and throat with laboratory tests for the germ, and pronounced the patient safe.

Diphtheria was formerly one of the most dreaded of all the diseases which attack children, but since the discovery of diphtheria antitoxin it is rapidly losing its terrors. Antitoxin is a very potent remedy *when administered promptly*. It is almost certain to effect a cure if given on the first day of the disease. It is likely to cure if given on the second day and is of only moderate value if delayed till the third or fourth day. Those who have been in close contact with a case can be protected from contracting the disease by a small immunizing injection of antitoxin.

Not only is there now a cure for the disease and the means of protecting people for a short time, but there is also a method of making children safe for many years, often for a lifetime. A physician can tell by injecting a harmless fluid into the arm whether or not a child is liable to get diphtheria. This is called the Schick Test, now given only to the older children, as practically all the younger ones are susceptible and need the toxin-antitoxin anyway. If a red spot appears on the arm, the child will take the disease if exposed to it.

Just as a person may be protected from smallpox by vaccination, so may a person liable to diphtheria be protected from an attack by having diphtheria toxin-antitoxin injected into his arm. It is given in three doses, one week apart, and causes little discomfort. Three to six months later the Schick test may be used to make certain that immunity has been given. The results of increased use of this treatment are in striking evidence. New York City reduced its death rate from diphtheria in ten years from 22.7 per 100,000 to 11.9 per 100,000. The city of Auburn, New York, had a death rate of 46.9 per 100,000 in 1920. In the year following there was but one death from diph-

theria in the city following the immunization of the school and pre-school children with toxin-antitoxin. In 1925 there were no deaths!

Physicians are now prophesying that in ten years, if people use these remedies, a case of diphtheria will be a curiosity. This can only be brought about by all children being given the toxin-antitoxin treatment in infancy.

Membranous croup, one of the most fatal diseases of childhood, is really diphtheria of the larynx. In this disease a membrane forms in the larynx which blocks the passage of air. Without prompt treatment the child strangles to death. Formation of this membrane is due to the presence of the diphtheria germ. Antitoxin treatment is given as in other forms of diphtheria and equally strict isolation must be enforced. It is necessary sometimes to introduce an artificial breathing tube into the windpipe.

DISLOCATIONS

When a bone gets out of place at a joint, the injury is called a dislocation. The joint looks out of shape when compared to the similar joint on the other side of the body and its motion is limited. There is much pain from pressure on nerves. Attempts by unskilled persons to replace the joint may cause very serious additional injuries. A physician should be sent for. The person in attendance should treat shock if it is present (page 4), then place the patient in a comfortable position and apply cloths frequently wrung out of very cold water, to the joint.

The only dislocation which may be safely treated without a physician's help is a dislocation of a finger joint (except the second joint of the thumb) which may be treated as follows: Face the injured person and pull the end of

the finger toward you. With the thumb and forefinger of your other hand, gently press on the dislocated joint until it slips into place.

DISPENSARY

(See *Clinics and Dispensaries.*)

DIZZINESS

The causes of dizziness are many. It may be brought on by extreme heat or by indigestion. It may indicate that something is wrong with the eyes or that the ears need the attention of a physician. Anemia is a frequent cause of dizziness. Occasional slight attacks need not necessarily occasion alarm but in case of continued or frequently recurring attacks one should consult a physician, for they may be symptomatic of more serious physical disorders.

DOG-BITES

(See *Rabies.*)

DRAFTS

(See *Ventilation.*)

DRINKING CUPS, COMMON

In spite of all that has been written and said on the subject, many people are still careless about using drinking cups after other people. In the past, particularly in rural schools, children frequently passed a common cup from child to child or dipped their own cups into the same bucket—practices now rapidly being eliminated. The saliva or sputum from the mouth may be one of the chief carriers of disease germs. Thus, the common drinking cup may be one of the surest means of spreading diseases, such as

tuberculosis, colds, pneumonia, diphtheria, etc. No teacher should allow her pupils to use a common cup. If no other cups can be secured, paper ones may be made by the pupils. No one should ask to borrow another person's drinking cup or offer a drinking cup he has used to another. No one should ever under any circumstances use a drinking cup that has been placed for general use at a stream or water faucet.

DRUGS

(See "*Patent*" *Medicines and Advertised Cures and Narcotic Drugs.*)

DYSENTERY

(See *Diarrhea and Dysentery.*)

THE EAR

The ear is a very delicate structure. The part which is visible is merely a receiver. A complicated apparatus for registering sounds and passing them on to the brain is out of sight. Disorders of the ear occur frequently as a result of infected tonsils or adenoids. Severe colds, measles, whooping cough, scarlet fever and diphtheria often cause infections of the ears. Careful watch must be kept during these illnesses.

A physician should be promptly consulted for any pain in the ear. While waiting for his arrival, temporary relief for earache can be given by placing a hot-water bottle or cloths wrung out in hot water over the ear.

Children should be taught never to poke their ears with hard or sharp articles and never to dig wax out of them. A physician should always be called upon to remove an insect or any foreign body that has become lodged in the ear. Serious injury may be caused by trying to remove

it for oneself. When an insect is buzzing about in the ear, a few drops of sweet oil or castor oil dropped in will relieve discomfort until a physician can be reached.

Occasionally wax hardens and clogs the ear passages so as to affect hearing. This condition can easily be cured by having a physician remove excess wax.

The American Federation of Organizations for the Hard of Hearing, 1601 35th St., N. W., Washington, D. C., is a source of information regarding methods for preventing and treating deafness, hearing devices, lip reading, etc. It conducts a national employment bureau for the deafened.

EARACHE

(See *Ear*.)

ECZEMA

Eczema is an inflammation of the skin accompanied by itching and burning. It is one of the commonest skin diseases, a disease to which babies and old people are especially subject. Eczema is frequently associated with improper diet or failure to assimilate food properly or with a generally run down condition. Too much fat in the diet and constipation seem to be frequent causes in babies. Sometimes a person gets eczema through sensitiveness to a certain kind of protein. Sometimes a surface irritation causes it. For example, some people cannot wear flannels without suffering from eczema. Chocolate dippers and workers in certain metals sometimes have eczema on their hands and wrists. It is in certain instances considered by some authorities to be infectious in origin.

Soothing ointments, such as zinc ointment, may quiet the itching. Cure can be brought about only by removal

of the cause. For this the services of a physician are necessary and long-continued treatment is often required.

ELECTRIC SHOCK

Everyone should make it a rule never to touch a broken or sagging wire or to repair electric fixtures himself.

When a person is discovered suffering from electric shock, the following first aid measures should be taken:

Remove the patient from contact with the wire (or third rail) without getting shocked. While he is still in contact with the wire, it is as dangerous for another to touch his flesh as to touch the wire itself. If his coat is dry, grasp it and thus drag him away from the wire. Or remove the wire with a dry wooden stick. While doing any of these things, stand on a dry board, or folded dry coat or newspapers, and wrap the hands in several thicknesses of dry cloth or newspaper. If near the power-house or switch, have the current cut off.

If the patient who has been removed from the wire is not breathing, start artificial respiration at once, and send for a physician. (See *Artificial Respiration*.)

EMPYEMA

(See *Pleurisy*.)

ENCEPHALITIS LETHARGICA

This disease is frequently called "Sleeping Sickness," because the symptoms are somewhat like the African sleeping sickness. It is, however, a totally different disease, and the germ which causes it is at present unknown. It is thought that this unknown germ enters the body through the nose or throat and attacks the brain.

The chief symptom is stupor. Sometimes this is only a drowsiness and sometimes it is a deep sleep. Paralysis of some of the muscles and spasmodic muscular movements are frequent symptoms. Sometimes the patient is delirious.

Good care and continued medical advice are required. The patient should be isolated and all articles used in the sickroom should be disinfected. Recovery from this disease is usually slow.

ENDOCARITIS

(See *Heart*.)

ENEMA

(See *Constipation*.)

ENURESIS (Bed-Wetting)

The tendency to frequent bed-wetting among children is usually a sign of bad training. Occasionally, however, it is due to some physical defect. The child may be suffering from adenoids or enlarged tonsils, which by preventing proper breathing make him extremely restless at night. The trouble may be due to chronic constipation, pin worms or some irritation of the genital organs. Food taken late at night or too much liquid at night are also contributing causes. Sometimes it is merely due to over-exhaustion causing all the muscles to become completely relaxed, including those in the bladder. The following treatment for this disorder is prescribed by Dr. S. Josephine Baker in her book, "Healthy Children":

"The establishment of good habits is the most important and first method to be followed. The child should be taught to have regular times for passing the urine throughout the day, and should be placed on the chamber at such

regular intervals. It may be necessary to do this as often as once every hour in the beginning of the treatment, but the interval can be lengthened later to once every three or four hours. In every instance, however, the child must be placed on the chamber the last thing at night and once or twice during the night. The diet should be adjusted so that the child has no liquids after 4 p. m. Supper should be very simple, consisting of easily digested foods such as cereal with butter, but no milk, some crackers or toast, and stewed fruit. If physical defects are found to exist, they should be removed. The suspicion that pin worms may be present should be investigated and proper treatment given. Constipation must be corrected, and it may be necessary to have an examination made of the child to see if there is any irritation about the genital organs. If other methods fail, raising the bed at the foot should be tried. Blocks may be placed under the foot of the bed so that it is raised four or five inches. The child should sleep without a pillow, so that the head may be distinctly lower than the rest of the body.

"Sometimes bed-wetting is caused by the child habitually lying on its back. An easy way to correct this tendency is to take a long strip of muslin and tie a knot in the center. The strip should then be placed around the child's body so that the knot comes directly in the middle of the back. It should be tied loosely so that there will be no constriction. When the child falls asleep and attempts to lie on its back, the knot immediately makes it uncomfortable and causes it to turn back on its side.

"A child should never be punished for this habit. There is no doubt that children so affected suffer mentally from this failing and would gladly control themselves if they

could. If, after all possible methods have been tried, the bed-wetting still continues, a certain amount of moral suasion may be used. Even in such cases, however, it is better not to use it in the nature of penalties, but rather in the nature of rewards. The child may be told that it may have certain things it wants or that it may do certain things it considers desirable, if the habit is controlled. When all home measures fail, the child should be examined carefully by a competent physician to determine whether there is any physical cause for the continued habit."

More rarely bed-wetting is a manifestation of nervous instability, requiring the attention of a physician interested in the mental hygiene of childhood.

EPILEPSY

Epilepsy is a chronic disorder of the central nervous system occurring most frequently in the early years of life, although the age of onset varies. It is characterized by a convulsion and loss of consciousness. Although the cause of the disease is unknown, it has been found that the essential type is based upon certain inherent mental characteristics, known as the epileptic makeup. Epilepsy may appear after a blow on the head or a brain injury. The most striking fact in connection with the hereditary nature of epilepsy is that at least one-fifth show no neuropathic ancestry, although the great majority are born of neuropathic-degenerative stock, including alcoholics.

An epileptic attack may come on suddenly, or there may be various types of warning, such as a sense of anxiety, painful expectation, irritability, hallucinations of sound, or seeing sparks or colors before the eyes, etc. An attack may last only a second or two (*petit mal*), or may last sev-

eral minutes (*grand mal*). Exhaustion afterward may be slight or severe, attended by headache, nausea, etc., and the patient may desire to sleep.

During an attack, the patient should be watched closely and care should be taken to avoid injury from falling. A cork or handkerchief placed between the jaws prevents tongue-biting. A simple diet consisting of cereal, bran, milk, eggs, vegetables, white meats such as chicken and lamb, and very little red meat is essential for an epileptic. Indigestion and constipation should be avoided. At the first symptoms of epilepsy, a physician should be consulted, since the longer the disease lasts the more chronic it becomes. A mental as well as physical upbuilding is the best means of approach to heal this disorder.

ERYSIPELAS

An old-fashioned and very appropriate name for this disease is St. Anthony's Fire. It is a fiery and very painful inflammation of the skin, caused by a germ. The first signs of the disease are usually a chill followed by a fever. Other symptoms are headache, loss of appetite, coated tongue and frequently vomiting. People with wounds or abrasions are especially susceptible to erysipelas.

The inflammation often starts on the face, but it may begin on the skin of any portion of the body. In erysipelas the skin is red, hot, painful and swollen, the affected area being clearly marked off from the normal skin. The swelling may be most marked about the eyes and ears—the eyes closing and the features becoming distorted. When the disease attacks the eyes it may cause blindness.

A person suffering from erysipelas should be under the care of a physician. The principal object of treatment is

to prevent the inflammation from spreading and to keep up the patient's strength with simple food. The disease is contagious. The patient should, therefore, be placed in a room by himself and everything coming in contact with him should be sterilized by boiling or burning. The person who cares for him should be free from any injury of the skin.

EUGENICS

(See *Heredity*.)

EXERCISE

The body was planned for an active life, for primitive man had to get his food by climbing trees, stoning birds and animals and digging in the ground. He had to be ever ready to resist the attacks of animals larger and stronger than himself. Much of the work our ancestors did with great physical effort we do by pressing a button, or raising a lever. A large number of us earn our living sitting at desks doing things with only the muscles of our fingers and forearms. Even manual workers usually employ but one set of muscles. The housewife may get more varied exercise than most workers, but labor-saving devices are constantly taking the place of manual work.

Since the body was developed by physical activity it will suffer from lack of exercise. The big muscles of the back and abdomen grow flabby and allow the abdominal organs to slump. The lungs grow lazy and make a fuss if asked to work hard, and the heart flutters and jumps excitedly. The organs of digestion and elimination follow suit. Even the blood vessels become weaker, less fit to carry the blood to the right places in needed quantities.

Exercise, to be beneficial, must be regular. The person who sits all the week and tries to make up for it by violent exercise on Sunday may do his body harm. Equally undesirable is the practice of not exercising fifty weeks in the year and then trying to make up for it in a two weeks' vacation.

Daily stretching and bending exercises, which use the muscles of the entire body, may be practiced in one's own room, morning and night. The daily use of such exercises keeps the body fit. A chart of exercises issued by the Metropolitan Life Insurance Company is suited to this purpose. Excellent exercises for home use are given in a book entitled "Physical Exercise for Daily Use" by C. Ward Crampton.

In addition to setting-up exercises, the body needs physical play. Everyone should find some form of outdoor sport which he enjoys so much that it will really be a recreation, that is, a re-creating of physical and mental energy. Hiking is a form that requires no equipment or membership in a country club. Cross-country hiking at a brisk pace is good exercise. Swimming is excellent. Tennis affords vigorous exercise for a large number of muscles, including the lungs and heart. Dancing in a well-ventilated room is an exhilarating and satisfactory exercise. Unfortunately dance halls are often over-heated and ill-ventilated. Golf provides exercise for a large number of muscles. It is excellent for people of all ages, especially those in middle or later life, since it does not involve as great a strain as tennis and many other games and athletic contests.

Necessary as exercise is to the body, it is easily possible to get too much of it. Young people should be discouraged from entering sports in a too competitive spirit. It is be-

lieved by many that college football or track heroes sometimes shorten life by over-straining the heart.

Then there are corrective exercises. Physicians are now giving exercise in prescription form. In many cases children crippled by infantile paralysis or deformed by rickets have been greatly helped by corrective exercise. Exercise by prescription is also used for cases of over-weight, under-weight, for fallen arches and for weakness resulting from breaking bones or straining parts of the body.

EYES

Care of the Eyes. The eyes are a person's most valued possession. Yet they are the organ of the body most frequently abused. Reading or sewing in poor light or in the blinding glare of unshaded bright lights is a severe strain on the eyes. Often there is a defect in the construction of the eye which needs correction. Many a child has been thought backward in school, when the real trouble was that his eyes were not working properly.

A person who has difficulty in seeing, or sees spots dancing before his eyes, or has frequent headaches should consult an eye specialist. Any chronic inflamed condition of the eyelids should receive prompt attention. Children should be watched closely for signs of defective vision. It is wise for parents to test their children's vision with a standard letter card, if this is not done in school. *One should never buy glasses without having the eyes examined by an eye specialist of good standing.*

Too great care cannot be taken to guard the eyes from injury. Infections resulting from carelessness are a common cause of blindness. Children must be warned to keep their toys away from their eyes and not to rub their eyes.

Nothing that is not perfectly clean should ever touch the eyes. A common towel should never be used, even among members of the same family.

In certain manufacturing processes the eyes of operators are in constant danger from flying particles. This is one of the commonest causes of blindness in the United States. In such occupations the use of goggles should be required. Some industries are enforcing this protection, because the results of carelessness have been so serious.

Acute Conjunctivitis or Pink Eye. This is an extremely infectious disease of the eye. A person suffering from it should be kept away from other people. The white of the eyes and the inner surface of the lids become red and inflamed and pus is discharged. The disease usually lasts from ten days to two weeks. The best home treatment is to bathe the eyes every two hours in boracic acid, but a physician should always be consulted.

A Foreign Body in the Eye. Severe pain and sometimes serious injury to the eye may be caused by some foreign substance entering it. Following are some good rules to follow: Don't rub the eye. Close it, and the tears may wash the speck out, or into view, so that it can be removed. Wash with boracic acid solution. If this does not succeed, close the eye and blow the nose hard. Wash the hands before touching the eye. Pull the upper lid down over lower, seizing upper eyelashes. If still unsuccessful, look at the lower lid, turning it down gently. Remove speck with a piece of *clean* absorbent cotton or the corner of a *clean* handkerchief. If may, however, be on the upper lid, or the surface of the eyeball itself. To remove specks from these locations is a difficult procedure. It is usually best not to try it yourself, but to send for a physician. If

the condition is very annoying and painful, soak some soft cloth in cool water and bandage this in place on both eyes, while waiting. Always send for a physician when the eyeball is injured. Any irritation remaining after the speck has been removed from the eye will be soothed by a couple of drops of castor oil. If acid has entered the eye, neutralize with baking-soda and water. Lime or any other alkali should be neutralized by weak vinegar solution in water.

Trachoma. This is a highly infectious disease of the eyes, which often causes blindness. It is most common in localities where people live under unsanitary conditions, for example, among Indians and among the so-called "mountain whites" of the South and among tenement-house dwellers. Because trachoma is common among the poor in Oriental countries and in some European countries, the United States Government takes especial care to see that immigrants to this country are free from it. The infection is carried upon fingers, sponges, handkerchiefs, towels or anything that has come in contact with the eye discharges. It is one of many reasons why one should never use another's towel. No person should sleep with another who has trachoma or on bed clothing that has been used by such a person. Children with trachoma should not be allowed to go to school till cured.

Blindness. One half of the blindness in the world is said to be preventable. One-quarter of the blindness of children is due to gonorrhea and one-tenth to the carelessness of the doctor or midwife when the child is born, according to a bulletin published by the United States Public Health Service. A few drops of nitrate of silver should be dropped by the doctor in every baby's eyes as soon as it is born. (See *Alcoholism*, *Gonorrhea* and *Syphilis*.)

EYESTRAIN

(See *Eyes*.)

FAINTING

(See *Unconsciousness*.)

FAITH HEALING

Recently we have heard of cures being performed by ministers and religious workers by what is known as "faith healing." The principle of this method of healing is the belief that God is all powerful and that if we have sufficient faith in his power we can be cured of disease. This method has been effectual in curing troubles of hysterical nature and other nervous disorders that lend themselves to treatment by suggestion.

In 1924 an investigation committee was appointed by the Ministerial Association of Vancouver, B. C., to try to discover the results of a faith-healing campaign that had been conducted in that city by an evangelist. This committee consisted of eleven ministers representing five denominations and the Salvation Army, eight physicians who were members of Christian churches, three university professors and one lawyer. The committee studied 350 cases, covering a wide range of ailments, that had been reported as cured by the evangelist and found that out of 350 cases only five could be classed as cured. These five cases and other cases which had been benefited to some extent by the treatment were all disorders that involved no organic trouble.

The conclusion of this committee was that "An attempt to apply mental healing in a sensational way without regard to character of the disease is a dangerous and very often an injurious experiment." The committee declared its firm

belief that "Health is a gift from God, that the laws of the body and mind as revealed by modern science are a divine revelation and that any attempt to establish a treatment by whatever name it may be called, in which these laws are openly or tacitly ignored, is contrary to good sense, to sound morals and to genuine religion."

The Congregationalist, commenting on this investigation, says: "When will Christian people learn that whatever may be the effects and possibilities in the wide field of healing, faith in God is surely more truly manifest in working with God's laws and agencies than in neglecting means of service and help that He has provided?"

No intelligent physician to-day will deny that faith healing when combined with competent medical diagnosis will produce results, particularly in cases of mental disease which in the majority of instances are caused by previous physical breakdown. Unless the latter is corrected, under competent medical guidance, little can be accomplished by faith healing alone. On the other hand, the medical profession has for centuries used the power of suggestion, faith, and hope, to stimulate mental activity and to supplement the physical repair which the body requires.

FALLEN ARCHES (Weak Feet)

Pains in one of the arches of the foot, in the ankle or calf of the leg or swelling of the ankles may be a sign that the bones forming the arch are no longer in proper adjustment. The bones of the feet are fitted together very much the way stones are fitted to form an arched stone bridge. One realizes the importance of strong arches, when one stops to think that they carry the whole weight of the body.

Sometimes people are born with weak or flat feet, but more often they weaken their arches by walking incorrectly, by wearing shoes that throw the weight of the body forward, instead of placing it as nature intended at the center of the arch, and by doing work that necessitates standing continuously on hard wood or stone floors. A person who is overweight is more likely to have weak and painful feet than a person of normal weight, since he is placing a heavier burden on the arches than they were designed to carry. A person who has normal feet and is of normal weight can usually avoid arch trouble, if he will walk right and wear proper shoes. Special attention should be given to proper shoes for children, for much can be done at this age to prevent future trouble.

The following rules for walking and for selecting shoes are suggested by Williams: *

"The entire mechanical structure of the foot indicates its use to be as follows:

"1. The foot in action should be placed on the ground with the line of direction parallel to the line of movement. The toes should point forward then and neither be turned outward nor inward.

"2. The weight of the body should be carried forward from the heel to the ball of the foot, with its disposition always to the outer part of the foot.

"3. In walking the heel should always strike the ground first and the weight then be transferred to the toes. Every step should produce elevation of the body on the ball of the foot.

"Look for the following in choosing a shoe:

"1. An approximately straight line from heel to toe.

*"Personal Hygiene Applied," by Jesse Feiring Williams.

Some feet show an inflare and some an outflare. There are shoes to fit these types. Most feet show a straight inner line and, as a rule, the straight line test for shoes should be applied.

"2. The front part of the shoe should be as broad as the foot for which it is designed.

"3. The heel should not be over $1\frac{1}{4}$ inches high and should be as broad on its wearing surface as the human heel.

"4. The shoe should fit snugly around the arch and instep of the foot and loosely over the toes.

"5. Patent leather shoes should not be chosen because they do not allow free ventilation of the feet."

Weak arches may be strengthened and serious arch difficulties prevented by taking daily exercise to strengthen the feet.

The following are suggested by Williams:

"1. Lie on your back and flex and extend the ankles as far as possible, laying most stress on the flexion. Bring toes up towards knees.

"2. With the ankle flexed as far as possible, practice bending the toes down toward the sole of the foot in an effort to grasp the sole.

"3. Sit on a chair or edge of the bed and try grasping or holding a lead pencil with the toes.

"4. With the legs extended and together try to turn the foot inward so as to see the soles of the foot.

"5. Practice these exercises every evening before going to bed. Begin first with a $\frac{1}{2}$ -minute period and increase to 30 minutes."

Continued pains in the arch of the foot or leg should receive prompt attention from an orthopedic specialist, that

is, a physician who has made a special study of structural deformities of the body.

FATIGUE

There is a comfortable tiredness and an uncomfortable tiredness. Fatigue that vanishes after a few hours of rest or with a change of occupation is natural and not harmful. Exhaustion, on the other hand, is known to have serious effects on health. It is thought by some that fatigue is due to actual poisons in the blood stream of the body produced by prolonged over-exertion.

Fatigue has an indirect bearing on most diseases, for it lowers the body's powers of resistance to germs and puts so great a tax on certain organs of the body that they are likely to succumb more easily to disease. Much illness can therefore be prevented by avoiding excessive fatigue.

When a person is habitually exhausted at the end of the day, one of several things may be wrong.

1. His work may be too unbrokenly monotonous.
2. He may be doing work for which he is unfitted either physically or mentally.
3. He may be overtaxing his whole body by overtaxing his eyes. (See *Eyes*.)
4. He may be working in a strained position or too steadily in one position. (See *Posture*.)
5. He may be exhausted from bad air. (See *Ventilation and Working Conditions Injurious to Health*.)
6. He may be wasting his energy in worry. (See *Mental Health*.)
7. He may not be having enough recreation. (See *Recreation*.)

8. He may not be getting the right kind of food. (See *Diet*.)

9. He may be neurasthenic. (See *Nervousness*.)

10. He may be simply bored with life.

To live happily and efficiently one must stop all possible leakages of energy. The working man who comes home at night exhausted should look carefully to the cause and see if it is anything he can help. He may need to wear an eyeshade at his work to shut out glaring lights. (See *Eyes*.) He may need to raise or lower his work bench so that he will not have to stoop or reach too much in his work. This also applies to school desks. If the place where he works is poorly ventilated and the air of the workroom is saturated with dust or lint from the manufacturing process, he should, if possible, find a better place to work. The effects of long-continued standing or reaching and lifting and of long hours may have even more serious effects on the health of a woman. Continual standing at work is extremely fatiguing for a woman. She should, if possible, arrange to sit at her work part of the time. If her day is spent sitting at a workbench or desk, she should take opportunities, when she can, to do work standing for a few minutes and should at least get up and stand erect occasionally.

The woman whose work is in the home should learn to save herself needless drudgery. So many labor-saving devices for the housekeeper have been perfected in recent years that there is no longer any excuse for a woman even in moderate circumstances to toil unceasingly in her kitchen. (See *Home Hygiene*.)

It is an interesting fact that a person tires much less quickly when he is keenly interested in what he is doing.

So far as possible a person should choose for his work something in which he can be keenly interested. In this age of machinery it is, however, impossible for many to have anything but monotonous work. Those who must do mechanical work can do much to offset it outside of work hours. (See *Exercise* and *Recreation*.) Exercise in the open air is the best antidote for the kind of fatigue that comes from work in a cramped position in bad air.

The time is perhaps not far distant when employers will generally recognize that it is to their interest to conserve the energy of their workers in every way possible—through a short working day broken by rest periods, through carefully adjusting seats, workbenches and machinery to the height and reach of the worker, through strict attention to lighting, ventilation and sanitation. Already we have examples of manufacturers who have gone far in removing needless strains and hazards and in making their workshops pleasant, healthful places in which to work.

Chronic fatigue that does not yield to preventive measures should receive the attention of a physician.

FATS

(See *Diet*.)

FATTY HEART

(See *Heart*.)

FEATHER DUSTERS

(See *Home Hygiene*.)

FEET

(See *Clothing* and *Posture*.)

FEVER BLISTERS

(See *Cold Sores.*)

FITS

(See *Epilepsy.*)

FLAT FEET

(See *Fallen Arches.*)

FLAXSEED POULTICE

(See *Home Nursing.*)

FLIES

The house fly is universally recognized as a dangerous pest. He is charged with spreading a number of diseases, among them typhoid, diarrhea, dysentery, cholera, and tuberculosis. Dr. Alice Hamilton found typhoid germs on the bodies of five out of eighteen house flies captured in privies and on a fence near a sickroom during an outbreak of typhoid in Chicago. The number of bacteria that a single fly can carry on its body may range all the way from 550 to 6,600,000. Flies breed in places that are very likely to be contaminated with germs—manure piles, privies and garbage dumps being their favorites. When one knows the number of diseases the germs of which are carried in the discharges from the intestines of human beings and animals one realizes that the fly can hardly fail to be a menace to health. Flies are all the more likely to be disease spreaders because their legs and bodies are covered with tiny hairs which easily pick up the filth with which they

come in contact. The fly is filthy, both inside and out, for he frequently vomits up or otherwise discharges the filth he has eaten wherever he happens to be.

It is easier to prevent flies from breeding than to kill them off after they have started to breed, for they multiply with astounding rapidity. About 120 eggs are laid by a single female fly at one time and only from 10 to 14 days are necessary before these eggs have hatched out into mature flies. Thus, in a single season one female may be responsible for several millions of flies.

The best way, then, to exterminate flies is to keep them from breeding. The housewife can do her part by making sure that all refuse containers on her premises are kept covered with covers that fit tight. Municipal health and county health authorities can do their part by seeing that garbage is carried away promptly, that it is handled in covered vehicles, and that it is burned or disposed of in a way that does not offer any attraction for flies. Most important of all, the manure pile, where 90% of flies breed, may be made safe from flies by the proper construction of bins and by screening or by disinfection of the manure with borax or other larvicide. The United States Public Health Service will send to anyone, free of charge, a copy of a booklet describing how to build a sanitary manure bin. The old-fashioned privy is another fly breeder when it is not built so as to be fly proof. (See *Privies*.)

If all these precautions are taken there are still likely to be a few flies left, for they have a great determination to live. These few can be kept out of houses if the housewife will be eternally on guard. Doors and windows should be screened with unbroken and tight fitting screens. If there is a hole in a screen, one may be sure that the flies

will find it. Fly traps, sticky fly papers and fly swatters should be used for those that stray in, in spite of all screens. Food, of course, should always be kept covered so that no flies may possibly contaminate it.

The housewife who is careful to protect her home from flies may still suffer from the carelessness of others. It is useless to screen from flies food that has been bought in a fly infested market and is used without washing. Housewives can do much to enforce cleanliness upon their marketmen by banding together and refusing to trade with those who are careless. The butcher, the baker, the grocer or fruit seller who does not screen his products from flies does not deserve patronage.

FOCAL INFECTION

Focal infection has been described as "an infection in which the bacteria exist in confined colonies in some part of the body and from there are sent out through the blood stream to cause trouble in some other portion of the body." There are several places which are favorite sites for colonies of bacteria—the roots of the teeth, the tonsils, the cavities in the skull immediately above the eyebrows and on either side of the nose (known as the sinuses) and the generative organs.

A focal infection may cause little or no discomfort at the point of infection and yet affect the health of the whole body. Wherever a battle takes place between disease germs and human tissue cells, the germs tend to produce a poisonous substance called toxin. If the infected spot is near the surface of the skin, the toxins may come to the surface and easily be removed. If it is deeper beneath the sur-

face, as in the case of an ulcer at the root of a tooth, the toxins may be carried by the blood to any part of the body.

Thompson * reports having "personal acquaintance with an industrial plant employing some 10,000 workmen where a dentist has been added to the medical organization during the past two years. By treating the large number of root abscesses which he discovers among the employees he already has markedly reduced the 'lost time days' among men who complained not of toothache, but of joint inflammations, lumbago, neuritis, neuralgia, sciatica, general malaise and similar ailments."

Diseased teeth and tonsils frequently cause arthritis, neuralgia and serious nervous disorders, and may also seriously affect the heart. Infections in the sinuses may cause serious ear troubles and occasionally, if neglected, may extend to the brain with fatal results. Infection of the mastoid bone back of the ear (mastoiditis) is another type of serious infection that requires prompt medical or surgical treatment.

Infected sinuses are often the after-effects of colds, influenza, pneumonia, measles, scarlet fever and other infectious diseases. Deformities of the nose and infected teeth are other causes. Pain and soreness in the face should receive the immediate attention of a physician. Abscesses at the roots of teeth may be caused by pyorrhea or by improper capping. Hence, visiting a competent dentist regularly twice a year is a precaution which will benefit the health of the whole body. A physician can tell whether or not tonsils are diseased. If he advises their removal, the advice should be followed promptly.

*"Focal Infections in Relation to Systemic Diseases," by W. Gilman Thompson, in *Boston Medical and Surgical Journal*, August 23, 1923.

FOOD POISONING

(See *Botulism*.)

FOOD VALUES, Table of

(See *Diet*.)

FOODS, PURE

(See *Marketing for Safe Food*.)

FOOT STRAIN

(See *Clothing*.)

FOREIGN BODY IN THE EAR

(See *Ear*.)

FOREIGN BODY IN THE EYES

(See *Eyes*.)

FOREIGN BODIES IN THE FLESH

Foreign bodies, such as splinters, pieces of clothing, or gravel, which become lodged under the skin are certain to carry germs in with them. Even if these germs are destroyed by the body cells, the presence of the foreign body will keep up an inflammation. Such objects should be removed at once; if they cannot be readily pressed out, they should be extracted by a physician.

FOREIGN BODY IN THE NOSE

Buttons, beans, and other hard objects are often pushed into the nose by children. There is no danger in removing them if they can be seen, and little force is necessary. Otherwise a physician should be called.

FOREIGN BODY IN THE THROAT

A particle of food or a fish-bone may become lodged in the back of the throat or further down, in the esophagus (the food passageway) or the windpipe. Children may swallow all sorts of small articles, such as safety pins, marbles, etc. The first thing to do is to place the patient in a chair facing the light, open the mouth and hold the tongue down with the handle of a teaspoon. It may be possible in this way to see the object and to extract it with a forceps, or by hooking the finger around it. If this fails, hold up the patient, if a child, by the heels upside down and slap him vigorously on the back, that the object may be dislodged and fall out. Have an adult lie crosswise on a bed on his abdomen with his head and shoulders hanging over the side. Send for a physician at once if these measures do not work. If the patient has swallowed some sharp article like a piece of broken glass or a pin, encourage him to eat as much as possible of mashed potatoes and bread for several days. These foods will surround the foreign body and prevent it from injuring the intestines. Give no laxative for several days. Watch the bowel movements until the object has been passed.

FRACTURES

(See *Broken Bones*)

FRUITS

(See *Diet.*)

FUEL FOODS

(See *Diet.*)

GALLSTONES

The gall bladder is a sac attached to the liver to hold the bile which the liver secretes. The bile is discharged from the gall bladder through a canal into the intestines where it plays an important part in digestion.

Sometimes certain substances in bile crystallize to form hard stones. This condition may be due to the presence of germs in the gall bladder. Conditions which are thought to favor the stagnation of bile in the gall bladder may be factors in the formation of gall stones; for example, lack of exercise, over-eating and constipation.

Often people have gall stones for years, even all their lives, and feel no uncomfortable symptoms. The stones make their presence felt when they cause inflammation in the gall bladder or in the canal leading into the intestines, when they have difficulty in passing through the canal or when they block the canal so that the bile cannot flow.

Chronic indigestion that does not yield to treatment may be a warning of gallstones. The passage of a stone through the bile duct is likely to cause attacks of excruciating pain in the abdomen, accompanied by chills and fever. The pain of these attacks can be somewhat relieved while waiting for a physician by hot compresses on the abdomen and by placing the patient in a tub of hot water.

In some cases revision of diet and systematic exercise constitute the only treatment necessary. In other cases an operation is required. Only a physician is competent to tell whether drastic treatment is necessary.

GANGRENE

During the Civil War and in earlier wars, many men had to have their legs or arms amputated because their

wounds became badly infected and then gangrenous; that is, portions of the flesh grew dark and putrid and became literally dead flesh. Neglect as to cleanliness was the cause of this condition. Since antiseptic care of wounds and antiseptic surgery have been perfected, gangrenous wounds are a rarity.

Gangrene may also be caused by any accident or disease which completely cuts off the blood supply from a portion of the body. Sometimes extreme hardening of the arteries in old age results in gangrene by preventing the blood from reaching the extremities.

Surgical care is always necessary for gangrene. (See *Arteriosclerosis*.)

GARBAGE

Garbage is not a menace to health in itself. The danger from careless disposal of garbage lies in the fact that it may contain food waste from the rooms of a person sick with a communicable disease or may be contaminated by germ-laden vermin. Garbage is the favorite feeding ground and sometimes also a breeding ground of flies. If your neighbor has a disease like tuberculosis or typhoid and is not careful to burn refuse from the sickroom the germ may be brought to you or your child by a fly. Or it may be carried by a rat or mouse which has come from a garbage can or garbage dump.

In the city the care of garbage is a municipal problem. The householder's part is to keep his garbage can covered and to keep the can clean. It is the city's job to see that garbage is collected daily and disposed of in some satisfactory way.

When garbage is dumped in a refuse pit or used to fill

in low-lying land, it is frequently a nuisance to the community by attracting flies, causing disagreeable odors, etc. When it is dumped into the ocean, it may wash back to shore. When it is dumped into a river, it is also a public nuisance. There are several satisfactory methods of disposing of garbage—one is to burn it in an incinerator, another to put it through a reduction or rendering plant. A reduction plant is an apparatus which sterilizes garbage and separates the different substances. For example, the fats are extracted and sold for use in soap-making and certain of the solids are separated and used in making fertilizers. By this method a city may not only get rid of its garbage in a safe way but receive money in return for it.

In small communities, another method of garbage disposal is through feeding to hogs, which may be a sanitary and economic procedure under certain circumstances.

In the country, every householder has to dispose of his own garbage. Carelessness on the part of one family may mean danger to the lives of a whole community. Hence every family should be careful never to let garbage stand from day to day, and to dispose of it by burning or burying deep enough so that it cannot be dug up by cats and dogs. (See *Flies* and *Home Hygiene*.)

THE GERM THEORY

The Indian medicine man dances about his patient shrieking and shaking noisy rattles. Influenza or tuberculosis is, to his mind, the result of a visit from an evil spirit which must be frightened away. All sorts of theories have arisen among people of different ages to account for epidemics of disease. They have been thought to be punishments of

an angry god. Noah Webster was of the opinion that earthquakes and volcanic eruptions had something to do with outbreaks of disease. A favorite theory until comparatively recent times was the "bad air" theory. Sickness was laid to night air, to damp air, to air containing sewer gas, to "malarial" air.

Not until the middle of the nineteenth century did men realize the existence of those invisible bits of life called bacteria and trace diseases to certain of these microscopic forms of animal and vegetable life called germs. This discovery came after years of peering through microscopes and into flasks and test tubes on the part of scientists. Chief among them was Louis Pasteur, the Frenchman, who proved beyond question that bacteria cause disease, that they exist in the air about us and that they can be killed, among other ways, by the application of heat. Pasteur paved the way for Joseph Lister and Robert Koch, two other pioneers of modern medicine. Lister perfected modern methods of disinfecting wounds and to Robert Koch the world owes the identification of definite disease germs, notably the germ of tuberculosis. Were it not for the discoveries of these three men, Pasteur, Lister and Koch, we might still be trying to keep well by shutting our windows to night air, we might still be drinking germ-laden milk, ignorant of how to pasteurize it, and we might still be helpless to check the spread of contagious diseases.

These and other investigations proved that germs of disease, under the microscope, had definite forms, round, rod-shaped or spiral-shaped, appearing singly, or in pairs, or in groups. They showed that certain of them could be grown outside the body under specific conditions and proved that they must enter the body in certain definite ways, as

by inhalation or ingestion, or through wounds; and that the body offered certain mechanical, chemical and biological resistance to their attacks. More and more these scientists are showing us how these germs of disease get from the sick to the well—by coughing, sneezing, spitting, etc., in the case of pneumonia and diphtheria; by ingestion of infected food products, as in typhoid fever; by inoculation through wounds, as in tetanus.

With this growing knowledge the group of what may be classified as "preventable diseases" has constantly widened, and the advances against the cause of unnecessary illness have given promise of the ultimate control of germ infection in man.

GERMAN MEASLES

A rash, sometimes accompanied by a mild fever and nausea, is the warning of this disease. The rash lasts from two to five days.

The discharges from the mouth and nose of the patient are the source of infection. It may be contracted either by coming in direct contact with one who has the disease or with articles recently soiled by the patients.

German measles, though mild, should always receive the attention of a physician, since it may be confused with measles or scarlet fever.

GLANDS AND GLANDULAR THERAPY

There are two kinds of glands that play an important part in the work of the body. One kind makes its functions very clear, for example, the glands which secrete saliva in the mouth and those which secrete gastric juice in the

stomach. The others, "ductless glands" do their work less obviously. Among these are the thyroid gland and thymic gland in the neck, the pituitary gland at the base of the brain and the adrenals above each of the kidneys. For a long time, little was known about the relation of the ductless glands to the health of the body. Experiments in recent years show that each of them manufactures a substance which finds its way into the blood stream and influences some part or function of the body. These substances are called hormones, or "chemical messengers." Failure of the ductless glands to develop or to do their work properly may have a marked effect on health and growth. For example, disturbance of the thyroid may cause serious nerve disorders and goiter, an under-active pituitary gland is thought to be a cause of dwarfed stature, and inactive adrenal glands may cause a disease known as Addison's disease.

Important progress in medicine has been made by the discovery of so-called gland-therapy—that is, the use of extracts from the glands of animals in treating gland disorders of human beings.

GOITER (Simple)

There is a gland in the front of the neck, called the thyroid gland, which as a rule does not make one aware of its existence. Its work is to absorb the iodine, which the blood has removed from the food and water ingested, and turn it into thyroidin, a substance important to the body's growth. Serious disorders result if this gland is either over-active or under-active. The most common disorder of the thyroid, known as "simple goiter," is due to

a deficiency of iodine in water or food or both. In this condition the gland enlarges. One may suspect the presence of simple goiter when there can be seen in the front of the neck a swelling or lump which moves up and down as the patient swallows. There are other and more serious diseases of the thyroid gland, a fairly common one of which is exophthalmic goiter.

Simple goiter is more common in certain parts of the country, sometimes called "goiter districts," where the iodine content of drinking water is below normal. Girls and women are more subject to it than are boys and men, and it occurs with greatest frequency between the ages of 12 and 16 and during or after pregnancy.

Simple goiter is easily cured, if the physician is consulted when the swelling is first noticed. When neglected, the condition may become serious, slowing down growth (in case of a young person), causing serious nervous disorders and even leading to cancer of the thyroid.

An iodide given in proper doses at the proper time will prevent simple goiter. It should be taken under the direction of a physician.

In some localities where goiter is common, the school children are given iodine tablets as a preventive measure. In other places the sale of iodized table salt is encouraged or required, while in certain cities iodine is added to the municipal water supply.

The administration of iodine tablets has been worked out by physicians and is a safe method of preventing the disease. Especially in those sections of the country known as goiter districts, this preventive treatment, given under the physician's direction, should be made available for children and should be a part of the pre-natal care of mothers.

GONORRHEA

Gonorrhea is a serious and highly contagious disease, usually of the sex organs. It is one of the most common of all diseases and next to measles probably the most prevalent disease which affects mankind. It is the sterilizer of the race. Like syphilis, gonorrhea brings in its trail painful and often dangerous complications. Among men it frequently leads to inflammation of bladder and kidneys, and is a cause of sterility. Chronic infection of the prostate gland and seminal vesicles subject the patient to the risk of having the infection spread through his blood to his joints and to other parts of the body, causing what is commonly called gonorrheal rheumatism. Among women the most frequent complication is inflammation of the reproductive organs. A large number of all surgical operations on these organs are said to be caused by this disease. Gonorrheal inflammation of the eye is a common result of gonorrheal infection of the sex organs. This infection is most frequently found in children. The United States Public Health Service states in one of its bulletins that one-quarter of the cases of blindness among white children is due to the infection of the child's eyes with gonorrheal pus in its passage through the birth canal at the time of delivery.

Gonorrhea is contracted usually through sexual intercourse with a person infected with the disease, especially a prostitute or a person with loose moral habits. A large percentage of prostitutes have gonorrhea. Rarely is it contracted through using the towels or bed-clothing of a diseased person. Public toilets are potential dangers. Children occasionally receive the infection in this way.

In women, the disease may be so mild that no attention

is paid to it. Therefore, competent medical advice is not sought. In men this is rarely the case, as it causes pain and other symptoms which quickly cause the sufferer to consult a physician. However, any unusual discharge of mucous from the sex organs should always be brought to the attention of a physician promptly. Sometimes a person may think he is cured and discharge himself from treatment, when the disease is really only responding to treatment and there is still danger of passing the infection on to others. In this way a large number of infections of gonorrhea are innocently acquired by married women.

The following suggestions to persons who are infected with gonorrhea are offered as an example of what a number of state boards of health are doing to protect the public health:

Consult a good physician immediately and follow his directions until he pronounces you cured.

Stay away from advertising doctors (quacks).

Don't use patent medicines.

Make getting well your principal occupation. Do not overwork. Avoid physical strains. Remember gonorrhea is a serious disease, even if the symptoms are mild.

Do not spread disease. Protect others from infection.

It is criminal to indulge in sexual intercourse while diseased and it is punishable by law.

Remember that you may spread disease by other means than sexual intercourse.

Be careful not to soil toilet seats with the discharge.

Protect the underclothing against soiling by the use of proper dressings. All such dressings should be immediately destroyed after use. Soiled clothing should be immersed in boiling water or an antiseptic solution before sending

to laundry. Carelessness may expose others to years of disease or blindness and death.

After handling the diseased parts, wash the hands thoroughly with soap and water. A wash basin should be thoroughly disinfected with soap and hot water and an antiseptic solution after use by an infected person. This is true of bathtubs also. Do not use a common towel.

Do not use another person's syringe and do not loan yours.

Sleep alone. Avoid sexual excitement.

Eat plain, wholesome food. Avoid stimulants and highly seasoned foods.

Consult your physician at least once a week.

Nothing is gained by changing from one physician to another. If you do make a change, be sure you continue in the hands of an honest, competent physician. Do not be deceived by the claims of advertisers to cure in a few days. A cure takes time. Do not stop treatment until your physician has determined by microscopic examination that you are cured of your infection.

No person who has ever had gonorrhea should contemplate marriage until a competent physician has determined by microscopic and other examinations that he is free from infection.

Further advice may be secured by writing to your City or State Board of Health, the U. S. Public Health Service, Washington, D. C., or to the American Social Hygiene Association, 370 Seventh Avenue, New York City.

GOUT

Gout is a disease which resembles rheumatism, attacking the joints, especially of the hands and feet. It has

been called a rich man's disease, owing to the fact that it is sometimes brought about by high living. The chief cause of gout is the accumulation in the body of certain substances derived from protein. Overwork or over-exposure and an inherited tendency are also factors in causing the disease. It usually begins between the ages of thirty and forty, and occurs more frequently among men than among women.

An attack of gout is preceded by indigestion, constipation, pain in the muscles and neuralgia. As a rule an attack lasts from one week to eight or ten days. The joints of the great toe are usually the first to become painful. The pain in the joints is severe and leaves them stiff, swollen and tender. The disease may be attended by irregular heart action, difficulty in breathing and an eruption of the skin.

Prevention of gout is a matter of living hygienically, taking plenty of exercise, having a well-balanced diet, not too heavy in meats and stimulants, and especially avoiding excessive use of alcoholic drinks. Though the tendency to gout may be inherited, it can usually be warded off by preventive measures.

The use of heat, light and electricity often give relief to the pain. A physician should always be consulted.

GRIPPE

(See *Influenza*.)

GROWING PAINS

(See *Osteomyelitis*, *Acute*, *Heart* and *Rheumatism*.)

HAIR, Care of

The hair and the scalp need to be kept clean. The purpose of the shampoo is to get rid of old skin, oil and dust.

There is no rule as to how often the hair should be washed. If the scalp is oily, the hair will need to be washed once a week. If the scalp is dry, two- or three-week intervals will be desirable. If one lives or works in the midst of dust and dirt, the hair will need washing more often.

To wash the hair one needs a bowl, a pitcher of warm water, a pitcher of cold water, some pure soap and warm towels. A liquid shampoo may be made by dissolving the soap in warm water.

Comb out tangles before starting the shampoo and brush the hair thoroughly toward the top of the head. Wet the hair with warm water and lather freely with soap. Rub the scalp all over with the finger tips, using the ball of the fingers, never the nails. Wash out the soap suds with plenty of warm water. Rinsing can be done best by someone else. Be sure all soap is removed. Repeat the soaping and rinsing if the hair is exceptionally oily. Use cool water for the last rinsing and finish with a dash of cold water to prevent taking cold.

Dry by rubbing the hair with warm soft towels. In warm weather the hair should be shaken in the outdoor air and sunshine. In cold weather the heated air rising from the furnace will dry the hair. Keep away from electric fans and drafts to prevent taking cold.

If the scalp is found to be particularly dry after the shampoo rub into the scalp—not the hair—a small amount of oily substance such as sweet almond oil, vaseline, borated vaseline or albolene. A good mixture is a half teaspoonful

each of castor oil and almond oil, and two teaspoonfuls of olive oil. A drop or two of oil of rose geranium may be added for perfume.

Brushing the hair brings a fresh blood supply to the scalp. This may also be accomplished by massaging. Rub the scalp briskly for two or three minutes every day with the fingers after dipping them in cool water. This will keep the scalp healthy.

Every person should have his own brush and comb.

Combs and brushes should be washed frequently. Put a tablespoonful of ammonia into a basin of warm water. Dip the brush up and down in it, being careful not to wet the back of the brush. The dirt will come out in two or three minutes. Then dip the brush in clean water to rinse it. Shake the water out and dry on a rack with the bristles turned down.

Dyeing the hair may be dangerous to the life of the hair. The coloring matter in dyes is often poisonous. The hair and scalp plainly show when dyes have been used. Peroxide of hydrogen produces an unbecoming color of the hair and destroys its natural life. The most beautiful hair comes from a healthy, well-cared-for scalp.

The hairdresser or barber to whom one entrusts the care of the hair, scalp or face should be very clean. Skin diseases, syphilis, "barber's itch," ringworm or lice may be spread in a dirty barber shop or "beauty parlor."

Scaling of the scalp in a mild degree is normal. Itching is a danger sign. It may be due to washing the hair too often, leaving some soap in the hair, the over use of hair tonics, shampoo, or hair dyes, or to an infection. If allowed to continue, dandruff may result in baldness.

To stop dandruff soak the scalp over night in olive oil,

sweet oil, almond oil, or liquid albolene. In the morning wash with warm water and soap. For an oily scalp use green soap, for a dry scalp, castile. Dry the hair thoroughly and rub into the scalp a little sulphur cream made from one teaspoonful of powdered sulphur to one ounce of cold cream. Use this oil shampoo treatment once every one, two or three weeks, depending upon the amount of dandruff.

Anything interfering with the flow of blood to the head affects the scalp and hence is likely to cause baldness. The wearing of hats with hard, tight headbands is said to be a frequent cause of baldness in men.

HARDENING OF THE ARTERIES

(See *Arteriosclerosis*.)

HATTERS' SHAKES

(See *Mercury Poisoning*.)

HAY FEVER

Hay fever is a seasonal disease occurring in the early spring, continuing through early summer and terminating usually with the first frost. It is caused by inhalations of dust (pollen) of flowers, weeds or grasses. Some people can breathe pollen-laden air and feel no ill effects; others cannot go into a room where there is a bunch of goldenrod without sneezing violently and experiencing all the unpleasant symptoms of a severe cold. The body is affected by the protein contained in pollen grains. In some cases the pollen from one plant causes the discomfort; in others, the pollen from another plant.

Just why some people are more sensitive to this disease than others has not been definitely established. It is

thought that heredity has something to do with it, and it has been noticed that a person of a nervous, highstrung temperament is more likely to be attacked than a more phlegmatic person.

The first symptoms of hay fever are usually violent paroxysms of sneezing, itching of the eyes and a watery discharge from the eyes and nose. An attack may be so violent that the patient is obliged to go to bed in a darkened room to secure relief, or it may be sufficiently mild as to cause merely slight discomfort. At its worst hay fever is a cause of much misery; at its best it is an irritating and nerve-wearing disorder.

The disease may be prevented in three ways:

By leaving a pollen-infested section during the hay fever season and going to a section known to be free from irritating pollens.

By destroying the weeds and flowers that are most likely to cause hay fever.

By being inoculated with a vaccine which renders the patient immune to whatever pollen he is sensitive to.

The first method of prevention is only practicable for people who have leisure and money.

The general destruction of the weeds and plants that are known to cause hay fever in large numbers of people calls for concerted action on the part of public health departments. Much could be accomplished in controlling hay fever by destroying ragweed, which causes more cases than any one other pollen-bearing plant.

Vaccine treatment for hay fever has been highly perfected within recent years. The patient is tested by scratching the skin and applying extracts of different pollens. The special pollen which is making the trouble produces a wheal

or swelling. When the offending pollen is discovered in this way, the patient is treated with a vaccine which is calculated to render him immune to the pollen protein. This treatment must be continued over several weeks and must be taken well in advance of the hay fever season. In some cases it is very successful.

Occasionally hay fever is caused by substances other than pollen dusts. The dandruff given off by horses, cats and other animals, feathers, and the wool in blankets may be exciting causes. These forms are easier to control and much less common than the pollen dust hay fever.

HEADACHE

Headache is not a disease in itself; but a sign that some part of the body is not working properly. It is useless to drug oneself with headache medicines. These deceive the patient by lulling his pain, while they leave the cause of the headache untouched. Furthermore, they are often actually poisonous, many headache powders and tablets on the market containing drugs which are injurious to the heart. Dosing oneself with aspirin is a practice to be avoided. This drug should never be taken, except by order of a physician.

Some of the most common causes of pain in the head are given by Galdston * as follows:

"Practically all infectious diseases, and especially those associated with high fever, set in with a headache, and may retain this symptom throughout the entire course of the disease. Anemia, in its various forms, often is the cause of headaches. Nephritis, or inflammation of the kidneys,

* "Tower Health Talks" of Iago Galdston, published by the Metropolitan Life Insurance Company.

produces like effects. Hysteria is one of the most common causes of a headache. Infection in the head cavities may produce pain in the head. Defective eyesight, uncorrected by glasses or incorrectly treated, will give pain above the eyebrows. Constipation, disorders of digestion, and in women, uterine disease, will produce severe or mild headaches."

In young children headache is often an early symptom of one of the communicable diseases of childhood.

Pain in the head is thus a warning that may indicate a serious organic disorder, or merely a temporary disturbance of the functions of the body. If a headache persists, and if it is accompanied by fever or rapid pulse, a physician should always be sent for. The sufferer from repeated headaches should consult a physician and find out the cause.

The best home treatment for headache is rest in a quiet room. An ice-pack on the forehead, or a cloth kept cold by being frequently wrung out of ice water, will often help relieve the pain. A dose of castor oil for the relief of constipation is sometimes the only treatment necessary. (See *Hysteria*, *Indigestion* and *Constipation*.)

HEALTH CENTERS

The object of a health center is to bring together under one roof the various public health agencies of a community or of a district. In this way a larger number of people can be reached at a lower cost. Sometimes the center includes the office of the local public health officials, the Visiting Nurse organization, the Red Cross, various charitable organizations interested in public welfare and different types of clinics. Sometimes it is strictly a medical center for treatment and prevention of disease and for health

education. Under this plan a physician is usually in attendance, and specialists are called in as their services are needed. Every patient is entitled to treatment whether able to pay or not. Health exhibits and the distribution of educational material on health subjects are an important part of the work. The following description of a New Haven health center gives an idea of the usefulness of such an institution:

"The activities of the Health Center fall into two groups: those which are definitely attacking disease and those which are endeavoring to conserve health. In the attack upon disease the Health Center is officially delegated by the Health Department with the responsibility for the control of communicable disease. It is caring for the bed-ridden sick through generalized, localized, visiting nurses. The early recognition by means of physical examination of conditions needing medical attention, and the bringing of the individual needing medical care in touch with his doctor or dispensary, is a direct attack upon disease in its earlier stages.

"The effort to conserve health in the healthy is made through the physical examinations of well people, through readily available health consultations, through well baby conferences and the prenatal clinic, through special health classes, through educational work of health talks, leaflets, posters, lantern slides, and window exhibits. The supervision of the health of the school child by the school nurses, the medical inspection of the children (children absent from school more than three days are medically examined at the Health Center before being permitted to return) and the far-reaching educational work of the school nurses, the dietitian, the dental hygienist, and sanitary inspector are

further health constructive measures. The use of prophylactic measures to protect against disease is slowly being accepted by the district. Community interest in health matters is being aroused through a local advisory council of thirty citizens, residents in the Health Center district, whose advice is sought and freely given on matters concerning community interests or coöperation." *

Health Centers in different communities vary considerably in their activities, but generally include both preventive and curative services for the benefit of a definite area or district. Well-known health centers at Oakland, California, Knoxville, Tennessee, and Des Moines, Iowa, illustrate this, as does the following more elaborate schedule for a single day's activities at the East Harlem Health Center in New York City.

8 A.M.-12:00 M. Baby Health Station—under auspices of Board of Health, Bureau of Child Hygiene.

9 A.M.-12:30 P.M. Oral Hygiene Clinic for Expectant Mothers under supervision and pre-school children—American Red Cross.

9 A.M.-5:00 P.M. Oral Hygiene Clinic—American Red Cross.

9 A.M.-5:00 P.M. Jefferson Auxiliary (Children's Clinic and Dental Hygiene Clinic) Board of Health, Bureau of Preventable Diseases.

10 A.M.-12:00 M. Psychiatric Clinic—State Charities Aid Association.

1:00-4:00 P.M. Eye Clinic—Board of Health, Bureau of Child Hygiene.

* "A Health Center with Emphasis on Health," by Philip S. Platt, reprinted from *The Nation's Health*, September, 1921, Vol. III, No. 9.

A POPULAR ENCYCLOPEDIA OF HEALTH 143

2:00-4:00 P.M. Schick Test—Board of Health, Bureau of Preventable Diseases.

2:00-4:00 P.M. Jefferson Clinic (Tuberculosis)—Board of Health, Bureau of Preventable Diseases.

3:00-5:00 P.M. Cardiac Clinic—Association for Prevention and Relief of Heart Diseases.

3:00-5:00 P.M. Nutrition Clinic—Child Health Station No. 4 American Red Cross, New York County Chapter (Girls 5-9 years).

7:30-9:00 P.M. Jefferson Clinic (Tuberculosis)—Board of Health, Bureau of Preventable Diseases.

8:15-10:15 P.M. General Medical Examination Clinic—Board of Health, Bureau of Preventable Diseases.

HEALTH OFFICERS

The discovery of disease germs awakened the public to the realization that health is a public as well as a private responsibility and the health officer a necessity as a human safety engineer. The value of his work in actual life saving has been shown again and again. He can practically abolish typhoid fever from his locality by vigilance in regard to disposal of wastes, and by strict attention to the drinking water and milk supply. He can wipe out diphtheria by encouraging the general use of toxin-antitoxin among school and pre-school children. Rabies is another disease which he can abolish by enforcing the muzzling or vaccination of dogs. By inspecting the dairies, by supervising slaughter houses, and by similar activities he can limit the spread of trichinosis, tuberculosis, diarrhea, enteritis and other affections. These are merely random examples of the health officer's power for good in his community.

A striking instance of the life-saving power of the health

officer was demonstrated in Yakima County, Washington. In 1910 this county had a typhoid fever rate three times as high as the average rate for the United States as a whole. In 1911, a full-time county health officer was employed and properly equipped to prevent the spread of the disease. During the following three years not one death from typhoid fever was reported in that county.

The first health officers in this country were appointed to prevent the spread of smallpox. All through the 17th and 18th centuries health officers were generally appointed temporarily, to attempt the control of special epidemics. When a given epidemic was over, the officers ceased to function. Not until near the beginning of the 19th century were permanent boards of health established, and not until late in the century were state and city boards general. To-day, every state has a health department, and every state makes some provision for local health organization in its cities and towns. A health officer is no longer merely a policeman or quarantine officer. He does not wait for disease to break out before fighting it, but fights disease at its source. He sees to it that the milk supply and water supply are pure; that markets are clean and not selling tainted food; that swimming pools and bathing beaches are sanitary, and that there are no unsanitary dump-heaps, cesspools or privies in the community. He is alert to guard the health of the people by every means, whether it be quarantining a house for scarlet fever, or conducting a center for weighing and examining babies, or carrying on health education among the children and adults of his community.

Health Officers in Cities and Towns. The duties of the modern city health department include the following:

A POPULAR ENCYCLOPEDIA OF HEALTH 145

1. Registering births, communicable diseases and deaths and reporting them to state health departments.
 2. Controlling communicable diseases through:
Laboratory investigations to discover bacteria.
Investigation of sources of infection.
Search for carriers and missed cases.
Hospitalization.
Isolation and quarantine.
Inoculation and vaccination.
Diphtheria immunization.
Furnishing treatment for venereal diseases free or at cost to those who cannot afford to pay for it.
 3. Looking after the sanitation of the community.
Water supply.
Sewage.
Waste disposal.
Rodent destruction.
Extermination of flies and mosquitoes.
Sanitation of industrial plants.
Abolishing nuisances (that is, anything which endangers public health).
 4. Inspecting and grading milk and supervising pasteurization and sanitation of food.
Issuing permits to milk dealers.
Meat inspection.
Sanitation of food-handling establishments.
 5. Enforcing housing regulations.
 6. Directing child hygiene work.
Pre-natal care.
Clinics for babies and children of pre-school age.
School hygiene and medical inspection of school children.
An important part of a public health officer's work is

educational. Through bulletins, newspaper stories, motion pictures and exhibits, he can do much to enlist the interest of the whole community in his work. The schools and the women's clubs can be made useful allies.

State Departments of Health. The state health officer has supervisory control over the sanitary work of the whole state. A very important feature of the state health activities is usually a laboratory service, where expert diagnosis can be carried out, involving the examination of blood, sputum, throat cultures, etc., and where antitoxins and serums can be furnished free or at cost to those who cannot afford to pay for them. Especially valuable is a good health laboratory in cases where rabies or tetanus infections may be suspected, and in tracing the source of an epidemic of typhoid. The state health officer fills in the gaps between the local health officers, and can render useful service in rural communities where there are no county officers.

The following description of the work of a typical state health department is quoted from Moore.* The department consists of seven bureaus.

"The Bureau of Communicable Diseases and Vital Statistics assembles reports submitted by 1,700 health officers in every city, village and township. Upon the threat of an epidemic, a study of the tabulated reports enables the department to warn physicians and others. Investigations are made, and inspectors of this bureau are sent upon request to assist local health officers or physicians in the diagnosis of communicable diseases. Six persons in this bureau give full time to the problem of venereal disease control, and the state maintains in coöperation with various cities sixteen clinics for the treatment of these diseases. A

* "Public Health in the United States," by Harry H. Moore.

traveling clinic has been sent into 75 counties during the two years of its existence, for the examination of adults for tuberculosis and of children for various defects and diseases. Patients are instructed to return to their home physicians for treatment. The Bureau of Laboratories maintains a staff of 37 persons, 4,600 of the 5,500 registered physicians of the state sending specimens to the laboratory. Free diphtheria antitoxin and other biological products are distributed. In the northern part of the state, a branch laboratory is maintained.

"The Bureau of Engineering has supervision of public water supplies and sewage disposal plants. A motor truck, operated by the Bureau of Engineering and the Bureau of Laboratories, equipped for water and milk analysis and diagnostic work, travels throughout the summer resort sections of the state with a staff of experts, to assist in the preparation of healthful surroundings for summer vacationists. In order to reduce infant and maternal mortality and improve the physical condition of children generally, a definite program is being developed by the Bureau of Child Hygiene, the head of which is a woman physician. Of particular interest is the fact that the state health department now controls the medical, dental and sanitary work of all state penal and corrective institutions through its Bureau of Institutional Health. Four full-time dentists are employed, and the work of a psychiatric unit is given special emphasis, 50 per cent. of the inmates of these institutions having been found to be mentally abnormal. Many inmates will be released; therefore, by treating those who have venereal diseases and those who are mentally abnormal, it is hoped that considerable damage may be prevented when the time comes for discharge. On the staff of the Bureau

of Education are two full-time lecturers and a writer who supplies weekly health articles to every newspaper of the state. A monthly bulletin, pamphlets and motion pictures are provided. In one recent year, representatives of the bureau gave 652 lectures,—with audiences totaling 68,662 persons. There is also a Bureau of Embalming.”

An important part of State health work is the maintaining of sanitariums where tuberculosis patients may receive treatment at a moderate cost. There are at present fifty-five state-owned tuberculosis sanitariums.

County Health Officers. In many sections of the country, life in rural communities is less healthful than life in the city. The reason for this is that these rural communities are without strict regulations for controlling communicable diseases, and for preventing practices that are dangerous to health. For example, hookworm disease, which is so common in certain parts of the country, is due wholly to carelessness in disposing of human excreta. Moore states that both hookworm disease and malaria to-day are almost entirely of rural origin, that there is more typhoid and dysentery in rural communities than in cities, and that tuberculosis in the country is surprisingly prevalent. Carelessness in regard to drinking water and milk is still amazingly common in the country. Practically all health work now being done in rural sections has come about through co-operation between the local and state authorities and the United States Public Health Service, or the International Health Board of the Rockefeller Foundation. Among the 2,850 counties of the United States, there are only 287 full-time active health officers; in addition there are a few full-time public health nurses. Results achieved in these coun-

ties have been gratifying, but much remains to be done to make the country as healthful a place to live in as the city.

The powers of public health officers differ in different localities. Usually they have the right to examine and isolate those suspected of having been exposed to a communicable disease, and to have anything in the way of a public nuisance abolished.

HEALTH SERVICE IN INDUSTRY

Medical, or health, departments in industrial plants are becoming common for two reasons:

First: Workmen's compensation laws have thrown upon employers the burden of the expense of medical care of injured workers. In a few states the laws also apply to certain occupational diseases.

Second: Employers are realizing that a physically defective or sick worker or a worker who is in a state of worry lest he be incapacitated through illness, is an inefficient worker and thus a person of lowered production value.

Industrial health service ranges in elaborateness from a small first aid room to an equipment similar to a modern hospital. The most complete medical departments for large industries include—

The full-time service of one or more doctors, sometimes including an oculist and a psychiatrist.

A staff of nurses.

Examining rooms.

A well-equipped first aid room.

A rest room.

Dental hygienists and sometimes dentists.

The service rendered in many plants includes:

150 A POPULAR ENCYCLOPEDIA OF HEALTH

A medical examination of every employee either before he is hired or immediately thereafter and at regular intervals during his period of service.

Immediate treatment of all injuries received during work hours.

Treatment of illnesses occurring during work hours.

More extensive service may include:

Visiting nurse service to homes of workers.

Regular cleaning of employee's teeth.

Services of an oculist.

Physical training in company gymnasium.

Supervised recreation during lunch period.

A convalescent home for those who are run down or are recuperating from illness.

To be a real force in preventing illness the plant physician must be able to correct insanitary and unhealthful working conditions, such as poor ventilation, bad lighting, exposure to poisons and dusts. Such preventive work is often of far more value to the worker and hence to the employer than all the rest of the service. The introduction of rest periods at stated intervals during the day is another preventive measure that is of considerable importance in some industries.

A plant lunchroom is an ally of the health department. Eating lunch at the machine or workbench is frequently a health hazard, when poisonous or injurious substances are used in process of manufacture. Also a dinner-pail lunch is seldom as nourishing as a hot meal. Usually the "company lunch" is furnished at cost or free.

Carleton Parker called modern industry "mentally in-

sanitary." Its monotony and mechanical quality, the complete lack of any creative quality in much of the work may do injury to nerves and mind while leaving the body intact. Frequently ills that are apparently physical have their roots in a nerve disorder. The chronic kicker and general trouble maker is often in reality a maladjusted person or a nervously disordered person. The services of a competent psychiatrist in an industrial plant can save much unhappiness and many a nervous breakdown. Sometimes a transfer of a worker from one type of work to another, or from the direction of one foreman to another is the best prescription that can be given.

Some of the advantages of a health and medical service to employers are set forth by Clark.* They are in brief:

1. Reduction of absences through—

- (a) Prevention of sickness.
- (b) Prevention of infection following injuries.
- (c) Proper treatment of serious injuries.
- (d) Reassurance of worker who is worried unnecessarily about his physical condition.

2. Reduction of number of accidents thereby reducing accident insurance rate.

- 3. Preservation of health of valued workers.
- 4. Prevention of labor troubles.
- 5. Increased good will of worker.

Another advantage to the employer is that, through physical examinations, he is enabled to fit the worker to the job he can best do without overtaking his strength.

* "Health Service in Industry," by W. Irving Clark.

Other advantages of a properly conducted health service to employees are:

Saving of money by preventing lost time through sickness.

Saving of money for physicians' and nurses' fees.

Education in hygienic living and health habits.

Health service to be acceptable to self-respecting workers must be free from the spirit of paternalism. Many labor leaders object to compulsory medical examinations, especially to examinations for the purpose of excluding the physically defective. This objection is usually withdrawn if the worker is assured that the examination is not for the purpose of throwing him out of industry but to select for him the job for which he is best suited and to enable him to build up his health in case he is below par. Samuel Gompers, late president of the American Federation of Labor, suggested as effective health measures clinics conducted under the joint auspices of the industry, organizations of the workers and the United States Public Health Service or the state board of health, these clinics to charge a small fee that would debar no one from their services.* The Workers' Health Bureau, Inc., of New York City exists for the purpose of organizing health centers for trade unions. It is also working to secure information regarding occupational hazards and to teach workers how to safeguard themselves against disease.

THE HEART

The Work It Does. The heart is probably the most efficient engine that was ever made. It works every minute,

* "Labor's Part in Health Service," in *Hospital Management*, May, 1924.

every hour, every day in the year. Though it is only about as big as one's fist, it pumps blood all over the body in quantities ranging from five to twenty quarts per minute. The heart has to be prepared for all sorts of emergencies. Suddenly it may be asked to send enough blood to the lungs and muscles to enable the body to win a four-mile rowing race or to keep the brain working at some knotty problem long past midnight. It can meet these emergencies in two ways: by increasing the volume of blood pumped at each beat and by pumping more times in a minute.

Fortunately the heart, with all the hard work it has to do, knows how to save its energy. After every "beat" it takes a rest, so brief a rest to be sure that a person doesn't notice it, but a rest all the same. These accumulated rest periods may amount to as much as fifteen hours out of the twenty-four. When one is asleep, the heart beats on an average of ten fewer times a minute than when one is awake. But when it is meeting an emergency, such as a sudden physical effort, its rest periods are shortened.

Causes of Heart Ailments. Occasionally a person is born with a heart that is not healthy. But, as a rule, people are endowed with hearts that will keep pumping away without a word of complaint through a long life, if treated reasonably well. And yet, over two million people to-day in this country have serious heart trouble.

The causes of heart trouble may be grouped as follows:

1. Continued over-exertion.
2. After-effects of other diseases.
3. Focal poisons.
4. Unhealthy mode of living.

Often a person may seriously strain his heart by requiring too violent spurts of effort from it. One who lives an inactive life for a long time and then suddenly plunges into intense physical activity is likely to do this. It is a wise policy always in taking exercise to take it regularly and to increase it gradually. Even the trained athlete may shorten his life in competitive games or Marathon races by straining his heart. Work for which a person is not physically suited or work performed for long hours in one position may cause heartstrain. Continued worry and lack of emotional control are also likely to do injury to the heart.

The heart bears the brunt of pulling the body through an attack of disease. There are certain diseases that seem to make especially hard work for the heart: measles, diphtheria and scarlet fever of the children's diseases, and pneumonia, typhoid fever, acute rheumatic fever and syphilis among general diseases. The heart should be carefully watched during the course of one of these diseases and active life resumed very gradually after convalescence.

It may seem surprising that diseased teeth should often seriously interfere with the work of the heart, but it is none the less true. This may come about in two ways. Poor teeth may cause indigestion, which may in turn affect the heart or may directly poison the system and thus affect the heart. (See *Teeth*.) In the same way, the heart may be affected by poisons from diseased tonsils or other infected spots that leak infective or toxic material into the blood.

Just as it is "the continual dropping of the water that wears the stone away," so it is often the continued strain of bad living habits that wears the heart out. The person who takes regular exercise out of doors, gets plenty of sleep, does not worry and lives on a moderate, wholesome diet is

coöperating with his heart. On the other hand, a person who exercises little or only spasmodically, overeats, uses alcoholic drinks freely and keeps himself at a high tension through overwork, worry or dissipation is working against his heart. Overweight is another foe to heart health.

Signs of Heart Trouble. The symptoms of heart trouble are so varied and confusing that one should never guess about it. Many a person has thought he had serious heart trouble when in reality there was nothing whatever wrong with his heart. Pain in the region of the heart is more likely to mean digestive disorder than heart trouble. Shortness of breath may merely mean an under-exercised heart, or a burden of excess weight.

A palpitating heart may be caused by poorly adjusted nerves. It has been said that: "There is not a single sensation connected with real heart disease that may not be caused by some other disorder." On the other hand a person may dismiss as "just a little touch of rheumatism" or "growing pains" or neuralgia or "short wind" symptoms that may lead to serious heart trouble. Three good rules for every one to follow are:

Never guess you have heart trouble until the physician tells you so.

Never neglect persistent rheumatic or neuralgic pains or pain in the chest.

Never take medicine for your heart, except by a physician's orders.

Prevention and Cure. Patients are inclined to regard the doctor's pronouncement that they have heart trouble as an announcement that they will die an untimely death or

be permanent invalids. This is quite unwarranted. Some heart ailments, if taken in the early stages, can be entirely cured. Even serious defects, if properly treated, can usually be arrested and a reasonably efficient heart secured. The cure of heart trouble is "up to the patient" almost more than any other disease—except perhaps tuberculosis. It is much more a matter of regulating manner of living so as to give the heart a chance to right itself than a matter of taking medicine. Above all, one should not worry over one's heart. "Watch your daily living habits; do not watch your heart," is the advice of a well-known specialist.

The foundations of heart health are, of course, laid in childhood. They involve avoidance of malnutrition, formation of health habits, regular school health examinations, avoidance of children's diseases and watchful care during these diseases when they are contracted, care of teeth and tonsils and giving heed to the warnings known as "growing pains."

The following are the common diseases of the heart:

Dilatation of the Heart—In this disease the chambers of the heart become enlarged because of diseased structure or strain.

Endocarditis—An inflammation of the membrane which lines the cavities of the heart and particularly that portion which covers the valves.

Fatty Heart—In this disease a deposit of fat is formed around the heart and in the heart muscle. It is frequently due to overeating or overindulgence in alcoholic drinks, and to infectious diseases.

Hypertrophy of the Heart—An increase in the size of the heart due to the thickening of the muscle wall.

Myocarditis—Inflammation of the muscles of the heart.

Angina Pectoris—This disease is characterized by a sharp tearing pain in the chest extending into the back, shoulders and arms and sometimes to the head, neck and trunk. The cause is not definitely determined.

Pericarditis—Inflammation of the Pericardium, a membrane which surrounds the heart.

Palpitation—This is merely consciousness of the heart beat, either because it is irregular or too rapid. It is often caused by nervousness but may be due to actual heart damage.

Valvular Disease of the Heart—Disturbance of the valves which prevents proper regulation of the flow of the blood to and from the heart. This form of heart trouble often follows rheumatism, diphtheria, smallpox, scarlet fever and other acute diseases.

Tachycardia—Rapid heart action. This may be a symptom of a serious heart disorder or it may be merely the result of nervousness, great fatigue or excitement. Occasional rapid heart action need not cause alarm, but continuous rapid action of the heart should receive a physician's attention.

HEARTBURN

This is a name for a burning sensation in the chest which comes on from ten minutes to an hour after taking food. It has nothing to do with the heart, but is due to a disturbance in the digestive juices of the stomach. It may often be relieved by a half teaspoonful of soda bicarbonate in water. Avoid tea, coffee and spices. A person who has heartburn frequently should consult a physician.

HEAT PROSTRATION

(See *Sunstroke and Heat Exhaustion.*)

HEATING APPARATUS

(See *Ventilation.*)

HEMORRHOIDS

Hemorrhoids are due to an inflamed and congested condition of the veins in the rectum. They are sometimes brought on by constipation. Symptoms are soreness, itching and bleeding of the rectum. Relief may often be secured by applications of ice and soothing ointment, by keeping the bowels open and by living on a very light diet for a short time. In severe cases surgery is the only remedy.

HEREDITY

If every child could follow Oliver Wendell Holmes's whimsical advice and "choose good grandparents," there would be striking results in reduction of sickness and misery and probably a marked decrease in the death-rate. Much can be accomplished for health by improving environment and by taking preventive measures against disease. But always, in disease, or in case of an accident, the final fight is between the inherited constitution and the germ or injury. The individual can do much for himself by hygienic living. The physician can do much with his modern weapons of warfare against disease. Yet constantly he is confronted with the problem of inheritance. Two people are living under identical conditions. One falls a victim to tuberculosis, the other remains strong and healthy. Two people of the same age sick with serious disease have the

same treatment. The one makes a prompt recovery, the other requires months for convalescence and is left with a weakened heart. Two girls of different parents grow up together in the same household and are given the same kind of care and mental training. The one grows up into a healthy, buoyant woman, the other breaks down in college and becomes a nervous invalid. Many cases like these can be explained only by a difference in that first bit of germ plasm that is the basis of all life, a difference that gives one person more stamina than another.

One cannot inherit tuberculosis, but one can inherit the kind of body that cannot seem to put up a good fight against tuberculosis. One cannot inherit many types of insanity, but one can inherit a temperament that is easily affected by nerve disorders.

Inheritance has been proved to play an important part in determining length of life. Dr. Alexander Graham Bell made a study of the history of a certain family and found that where neither parent lived to be eighty, only 5.3 per cent. of the offspring lived to be eighty; where one parent but not the other lived to be eighty, 9.8 per cent. of the offspring lived to be eighty; where both parents lived to be eighty, 20.6 per cent. of the offspring lived to be eighty.

Galton, a cousin of Charles Darwin, was the first scholar to call attention to the inheritance of mental traits and mental capacity. He studied certain family lines and concluded that the son of an eminent man had about 500 times as great a chance of showing ability as a son of a man taken at random. He pointed to the glories of the ancient Greeks as an illustration of how stock may deteriorate. The Greeks of Aristotle's time were, in Galton's opinion, as far superior intellectually to the English race of to-day as the English

race is superior to the African negro. "If," he writes, "the high Athenian breed had maintained its excellence and had multiplied and spread over large countries, displacing inferior populations, it would assuredly have accomplished results advantageous to human civilization to a degree that transcends our powers of imagination." *

For years men have brought their intelligence to bear in breeding perfect types of plants and animals. They have developed flowers of rare beauty from simple wild flowers. They have bred animals for utility and for beauty. The results have pointed to the conclusion that if greater intelligence were exercised in mating human beings strains that were weak physically or weak mentally might be bred out and the strong and intelligent might be kept free from hereditary taints. The difficulty lies in being able to determine among human beings who are the mentally weak. The results of intermarriage of races still require long and continued study before this fact can be determined.

Some students of the subject believe that the markedly unfit, particularly feeble-minded individuals, those suffering from venereal disease, etc., should not be allowed to marry. To this end, marriage laws have been passed in certain states, restricting marriage to those who are able to pass a proper health examination. In addition, segregation and even artificial sterilization of certain types of feeble-minded are widely advocated at present as measures for stemming the increase in defective mental types.

Other methods of race improvement are:

1. Abolition of war, which destroys those selected as the most nearly physically perfect.

* "Hereditary Genius," by Francis Galton.

2. Wiser marriage laws to prevent the mating of the feeble-minded, the hopelessly insane or epileptic, the congenitally blind, deaf and dumb, and those suffering from other inherited defects that unfit them for usefulness.

3. Education on the subject of inheritable traits leading to higher ideals of marriage.

Every child, on reaching adolescence, should be taught by teachers or parents that he or she has an important duty to society. He should be told that the germ plasm which is the basis of his life is a precious heritage of the combined qualities of a long line of ancestors; that it rests with him whether he shall pass this on to the next generation unimpaired or mar it. He should understand how he may improve or mar this heritage by selecting wisely or unwisely his mate. "The Betrothal," a play by Maurice Maeterlinck, presents this subject in a way that is appealing to young people. It makes an excellent preparation for a talk by parent or teacher.

HERNIA

(See *Working Conditions Injurious to Health.*)

HICCOUGH

A hiccough is an audible "complaint" on the part of the body usually indicating that the stomach is temporarily not functioning entirely normally. Overeating or eating too fast are frequent causes. It is not uncommon in babies who are overfed. As a rule, an attack can be stopped by simple measures. Holding the breath for a few seconds is sometimes sufficient. Swallowing a bit of ice is another

remedy. It may be necessary to cause vomiting and in prolonged attacks the attention of a physician may be required.

HIVES

Hives is characterized by the eruption of red spots which swell up and itch extremely. They may be confused with mosquito or flea bites. The swollen spots may be in groups or they may be scattered over the body. Hives is likely to appear rather suddenly and may disappear in a few hours or may last for days. It is sometimes caused by eating something which has upset digestion. Shellfish and certain other foods, notably strawberries, cause hives in some people. A dose of epsom salts will usually bring relief by ridding the system of the disturbing foods. Bathing the eruption with bicarbonate of soda dissolved in water is soothing. A severe case should be treated by a physician.

HOME HYGIENE

The health of a family is largely in the hands of the housewife. A house that is not kept clean or is ill ventilated is not only unpleasant, but also unhealthful. Dishes, clothing and bed clothing that are not properly washed may carry disease from one member of the family to another. An uncovered garbage can invites flies, rats and mice. Dusty beds and mattresses are alluring to bedbugs.

First of all, the competent housewife secures the best possible equipment she can for her job. Not all housewives can afford electric ranges and electric dish-washers, but they can raise sinks, stoves, tables and tubs to a convenient height so that they do not have to break their backs bending over. They can have carpet sweepers and vacuum cleaners (hand power when electric is out of the question) and home-made

fireless cookers. They can have a kitchen cabinet where the things they use most frequently in preparing meals can be kept together. They can usually arrange cook stove, cabinet and work table so as to save extra steps. They can have some kind of a rough, home-made tray on wheels to roll in and out of the dining-room. A few of the conveniences that every housewife needs are:

Refrigerator.

Vacuum cleaner.

Cleaning mops and brushes into which may be fitted handles of different lengths.

Washing machine.

Kitchen cabinet.

A sink that can be kept clean easily.

Electric, gas or kerosene stove to use in hot weather and at other times when it is inconvenient to have fire in coal or wood range.

Complete up-to-date equipment for kitchen, laundry and house-cleaning is described in a leaflet published by "Good Housekeeping," 119 West 40th St., New York City, price 25 cents. "Good Housekeeping" also issues a list of "Household Devices Tested and Approved."

A competent housewife schedules her work.

She has certain days for certain tasks. She definitely plans each day's work, not leaving out rest periods.

Following are some of the most important duties in a housewife's routine:

1. Disposal of wastes. The garbage can should be kept covered and should be scalded frequently. Lining the can with paper makes it easier to keep clean. It should always

be dried thoroughly after cleaning before it is used again.

2. Protection of food from dirt, odors and infection. Food left uncovered is likely to become polluted by insects or dust and to absorb odors. Milk and butter absorb odors very quickly.

A tightly-closed refrigerator is the best place for food. When food is left outside the refrigerator or cupboard, it should always be covered with close-fitting covers. Careful screening of doors and windows is an important item in protecting food from contamination.

The care of the refrigerator is one of the most important of the housewife's duties. The shelves should be looked over every morning to see if any food should be removed. A small portion of decayed food may spoil the entire contents of the refrigerator by the strong odors it gives off. The inside of the refrigerator (including chamber and waste pipes) should be washed out once a week with cold water to which a few drops of ammonia have been added or with soda water. Occasionally it should be washed with hot water.

Ice, if dirty, should be washed before it is placed in the refrigerator.

3. Cleaning dishes. Equipment for cleaning dishes may well include—dishcloth, dishmop, soap shaker, metal dishcloth, steel wool, rubber plate scraper, dish drainer, wire-handled brush for milk bottles, sink strainer, sink brush, soap scouring powder and sal soda. A small spray that can be attached to a faucet is a great labor-saving device.

Much labor is saved by scraping the food thoroughly from the dishes, wiping off grease with paper and soaking greasy pots and kettles in sal soda water. Dishes should be washed in hot soapsuds and rinsed with scalding hot

water. Knives, forks and spoons need to be washed and scalded with especial care.

4. Keeping clothes clean. Clothes should be washed in hot soapsuds, scrubbed or boiled till they are clean and rinsed thoroughly. Whenever it is possible, dry clothes in the open air and sunlight. When the washing is sent out, the laundry should be selected with care. Some people send their laundry to private homes. In such cases the housewife should make sure that the clothes are washed in clean surroundings and that there is no one in the house ill with a communicable disease. Clothing that cannot be washed needs frequent cleaning either at home or by a dry cleaner. When the cleaning is done at home, the gasoline should be used out of doors and the clothes thoroughly aired before being brought into the house, to avoid danger of fire.

5. Keeping the bathroom clean. Scrupulous care of the bathroom is essential to the comfort of the family. Bath-tub and bowl should be washed with hot soapy water every time they are used. Special care should be taken to wash and scald the bowl after brushing the teeth into it. The toilet should never be left unflushed and the seat needs daily washing. (See *Privies*.)

6. Care of beds and bedding. The bed clothing and mattress need thorough airing every day and bedframe and springs should be kept free from dust. At least once a month brush the mattress and beat it with a flat rattan beater, or clean with the vacuum cleaner. Changing sheets and pillow cases weekly is required by every one who has regard for cleanliness. It is equally important to wash or dry clean blankets and bed quilts as often as they become soiled.

7. House cleaning. Keeping the house clean should be

largely a preventive process. Frenzied, spasmodic house-cleaning accomplished in a cloud of dust is unnecessary if dirt and dust are prevented from accumulating. Some of the preventive measures good housewives use are:

Oiling floors or covering them with linoleum.

Using rugs instead of tacked-down carpets.

Running a vacuum cleaner or carpet sweeper over the rugs in the most used rooms every day and dusting bare floors with mops.

Shaking and beating rugs out of doors every week.

Dusting rooms daily. Care should be taken to gather the dust into a cloth without scattering it. Flitting dust about with a feather duster is worse than useless.

To neglect the cellar is to endanger the health of the household. It should be well aired and cleaned often enough to keep dust from accumulating and vegetables and fruits from decaying.

HOME NURSING

Every person responsible for the welfare of a home should know **how** to take care of a sick person intelligently. She should understand how to ventilate a sickroom, she should be able to take temperature, pulse and respiration; to make a bed properly; to change a bed with the patient in it; to bathe the patient in bed; to give an enema; to use ice packs or hot applications; to give alcohol rubs and other simple treatments that may be ordered by the physician. In the case of communicable diseases, it is imperative for the person in charge of the sickroom to know how to disinfect dishes, other articles used by the patient, and body dis-

charges, and how to give the proper care to the patient's room after his recovery.

In many illnesses the recovery depends more on nursing than on medicine, as in case of typhoid and tuberculosis. In any illness a good nurse can do much to lessen discomfort and hasten recovery. Following are some of the simple treatments that a physician may order:

Soapsuds Enema: A soapsuds enema is an injection of soap-suds into the rectum, to act as a laxative.

How to prepare and give a soapsuds enema:

1. Make a soap jelly by pouring boiling water on soap and allowing it to stand.
2. To a quart of water add enough of the soap jelly (3 to 4 ounces) to make good suds. Keep warm at 98° to 100° F.
3. Mix well and strain through two thicknesses of gauze.
4. Have enema bag ready with tubing connected and clamp in working condition; also have bedpan ready.
5. Cover end of enema tube or nozzle with vaseline.
6. Cover patient with blanket, rolling bedclothes back to foot of bed.
7. Place bag about three feet above level of mattress (on hook or pole).
8. Allow small amount of water to run through tube out into pan, to expel air from tube and run off any cold fluid in the tubing.
9. *Position of Patient*—Lying on left side with knees flexed; a patient rests more comfortably by placing right knee up, over left knee.
10. Insert nozzle gently into rectum and allow water to

flow slowly. If obstruction is felt, do not use force. Hold folded towel over anus to help retain enema. Enema should be retained about ten minutes, if possible. Give bedpan.

The result of an enema should be charted clearly so the doctor will have definite information in regard to it. Thus:—Enema 8 A.M. Enema was expelled with large, light brown, formed stool.

Hot Water Bag:

(a) Fill the pitcher with hot water (not boiling). Test for temperature; children 120° F., adults 150° F. If there is no bath thermometer, test by pouring on front of wrist.

(b) Fill the hot water bag about three-quarters, and expel air to avoid bursting the bag.

(c) Cover the bag and *take care not to burn the patient*.

Caution: In case of an unconscious patient, place the bag outside of blanket nearest him.

(d) It is important that the hot water bag be kept hot. The water should be renewed often enough to maintain the heat.

(e) Learn how to slip a bag in and out at the foot of the bed without disturbing the patient.

Mustard Paste:

(a) *How to make a mustard paste:*

For *adults* the proportions are: mustard one part, flour four parts.

For *children* the proportions are: mustard one part, flour six to ten parts, according to age.

To make a paste six inches square use *one tablespoonful of mustard* and flour according to the above proportions.

Put mustard in bowl; add flour.

Mix flour and mustard thoroughly with spoon, crushing all lumps.

Mix into paste, adding *gradually* enough lukewarm water to make a paste that can be spread easily but will not run.

Rub smooth with spoon.

Lay a piece of old white muslin on a warm plate.

Turn the paste out on the center.

Spread about one-eighth inch thick, leaving border without mustard. Turn back edges.

Cover with piece of old muslin, turning in edges.

(b) How to apply the mustard paste:

Place on dry skin and hold in place with light bandage.

Watch area frequently by lifting corner of paste.

Leave until skin has a pink flush (usually ten to twenty minutes, but it may appear in less time).

After removing, oil skin with vaseline, making sure that no particle of mustard remains.

Cover area with cotton and keep warm.

Mustard Leaves:

Dip in tepid water.

Fold between two layers of gauze.

Place mustard side to area.

Watch skin carefully.

Remove when skin has a pink flush.

Mustard Foot Bath

How to Prepare It: Tie the mustard in a piece of muslin (one-half ounce for each gallon of water) and place in a

foottub of hot water (about 115° F.). It is always good procedure to start with water about 105° F. and bring it up to the required temperature of 115° F. just at the moment when you are ready to immerse the patient's feet. It is easier to add hot water to bring up to the desired temperature than it is to add cold water to reduce it. Test the temperature with a bath thermometer if there is one. If not, test with the wrist or elbow. Do not rely on your fingers as they are not so sensitive to heat as are the wrist and elbow.

Procedure in giving a mustard footbath:

(a) Place blanket over patient, folding bedclothes back to foot of bed. See that they are well out of the way.

(b) Protect lower half of bed with rubber, oilcloth, or newspapers, with the upper edge reaching under patient's hips.

(c) Bring in tub about one-half full of mustard bath water; place in bed at the foot.

(d) When everything is ready and before placing patient's feet in the tub, add hot water (from pitcher) bringing temperature of water in tub up to 115° F. Put your own hand in first, to make sure that there is no danger of burning the patient, and then place patient's feet in the tub.

(e) Fold rubber and blanket over the tub and around knees.

(f) Draw up bedclothes.

(g) Place ice cap on head.

(h) Allow feet to remain in tub twenty minutes.

(i) Remove foottub, dry feet carefully, remove rubber and blanket.

(j) Know that patient is dry, warm and comfortable.

Flaxseed Poultice:

1. Have water boiling in saucepan. (Do not allow water to stop boiling.)
2. Sift in flaxseed slowly, stirring constantly until mixture is of a batter-like consistency: add pinch of baking soda.
3. Beat until light and smooth. (You may use an egg-beater.)
4. Have piece of old muslin on hot plate.
5. Turn out poultice on this, spread to half-inch thickness, turn in edges of muslin, cover with muslin. Hurry to bedside. The important thing is to keep this poultice hot.

Method of applying the Flaxseed Poultice:

1. Have ready a binder (old muslin), safety-pins, towel, oiled muslin, vaseline and cotton or gauze.
2. Have binder in place.
3. Oil the skin well with vaseline (vaseline on gauze or cotton).
4. Test temperature of poultice with wrist.
5. Place poultice gradually and lightly until it can be tolerated without burning.
6. Cover with oiled muslin.
7. Cover with towel.
8. Fasten on with binder.
9. Change before poultice becomes cold.
10. After removing poultice, oil area with vaseline and cover with cotton pad.

Stupes: Stupes are compresses preferably made of flannel or flannelette, wrung out of boiling water and applied to the skin.

How to apply Stupes:

1. Arrange one piece of flannel in heavy towel and place in basin, allowing the ends of the towel to hang out over the edge of basin. This arrangement will enable you to wring out the compresses without burning your hands.

2. Pour boiling water till the stupe is well soaked in the water. Another method is to boil the water and towel containing stupe together in the basin.

3. Carry basin containing towel and stupe in boiling water to bedside of patient.

4. Cover the part to which stupe is to be applied with vaseline. This is to be done before putting on *each* stupe.

5. Wring stupe dry by twisting the ends of the towel in opposite directions.

6. Shake stupe out and fold it so that you have at least four thicknesses of flannel.

7. Test its heat by holding to your face. Apply. Cover with oiled silk or oiled muslin and over this place a warm blanket.

8. Get another stupe ready in the same way. Two stupes should always be provided, so that one may be prepared before removing the other. Keep changing them as fast as you can.

Great care must be taken in applying stupes. To be useful they must be hot, but at the same time one should remember that there is danger of burning the patient. They should be wrung dry and the part to which the stupe is to be applied well covered with vaseline before *each* stupe is applied. Do not expose the patient any more than is absolutely necessary. When the stupes are taken off, dry the skin thoroughly, powder and put a warm, dry flannel over

the part. Stupes are given as ordered by the doctor, but should be stopped immediately if the skin becomes irritated, and not applied again until the skin becomes normal.

Ice Cap: Fill two-thirds full of finely cracked ice. (Put ice in strong cloth and break with mallet or hammer.)

See that washer is on cap.

Expel air.

Screw cap on tightly.

Cover, and take care to avoid freezing the tissues.

Place on with binder.

Refill when necessary.

Cold Compresses: Fold piece of gauze or soft linen (raw edge inside) large enough to cover the area to which it is to be applied. At least two compresses are necessary, to permit continuous application.

Place compress on ice in a basin, and allow to become cold.

Wring out so it will not drip, and apply.

Keep the second compress on ice and change as soon as the first gets warm.

Cold Compresses for the Eyes:

Use soft old linen for eye compresses.

Place several compresses (each cut a little larger than the eye) on a block of ice in a basin.

Change the compress every few minutes.

If there is discharge from the eye, each compress should be used *once* only, and put in a paper bag to be burned.

Use separate compresses for each eye, if both eyes are being treated.

The doctor will give definite directions in regard to chang-

174 A POPULAR ENCYCLOPEDIA OF HEALTH

ing compresses and the length of time the applications are to be continued.

Cold Air Treatment: In very few homes are conveniences found for putting the patient out of doors, but very good cold air treatment may be given by preparing the patient carefully and then opening the windows.

Preparation of Patient for Cold Air Treatment:

Woolen gown.

Warm blanket tucked under feet and close to body.

Hotwater bag to feet.

Scarf or shawl over chest and neck, and tucked in securely back of neck and shoulders.

Woolen covering for head tucked in close to neck.

A newspaper pad between mattress and bedspring to keep out the cold air from below.

Bedclothes well in under mattress and around shoulders.

It is a great comfort to the patient if the lower corners of the pillows are drawn out over the bedclothes.

Select best place in room for bed with thought to air and sunshine. Open windows.

The American Red Cross Textbook on Home Hygiene and Care of the Sick gives detailed information on home nursing. It can be secured for 70 cents from the American Red Cross, Washington, D. C., or from the Publisher, P. Blakiston's Son & Company, 1012 Walnut St., Philadelphia, Pa.

HOOKWORM DISEASE

Many a person has unjustly been called lazy or even feeble-minded when he really was suffering from hook-

worm disease. The victim of this disease is literally having his blood sucked from his body by living worms. The effects are particularly serious in the case of children, since it stunts growth.

The hookworm is a white worm less than half an inch long. It bores its way into the body through the skin, enters the blood-vessels and finally reaches the bowels, where it begins to suck the patient's blood and where it lays its eggs.

A person who thinks he has hookworm disease should either consult a doctor or send a sample of his bowel discharges to the laboratory of the State Board of Health for examination. The disease can easily be cured. Many State Boards of Health will send patients hookworm medicine free of charge. To take medicine to cure hookworm disease and to do nothing to prevent more hookworms from entering the body is shortsighted. The disease is carried from person to person purely through carelessness in the disposal of discharges from the bowels of human beings. It is largely a rural, tropical or subtropical affection.

The ground thus becomes infested with the worms, which usually enter the body through the skin of the feet. Sanitary toilets or privies and shoes and stockings are the obvious enemies of this disease. (See *Privies* and *Rural Community Hygiene*.)

HORMONES

(See *Glands and Glandular Therapy*.)

HOUSE CLEANING

(See *Home Hygiene*.)

HOUSING

Children, like plants, need fresh air and sunlight to make them grow. Luther Burbank said: "All animal life is sensitive to environment, but of all living things a child is most sensitive. A child absorbs environment." A child living with several others in two or three badly lighted and ventilated rooms is handicapped at the outset of his life. He is likely to have rickets and to suffer from malnutrition and anemia. Tuberculosis may find him an easy mark. He is not likely to develop his full physical powers, because he has no place for the body-building, muscle-stretching outdoor play every child needs. In the same way his nervous makeup suffers. He sleeps in the midst of noise and confusion or sits up till the older members of the family go to bed. He is constantly over-stimulated by the crowded life around him. He strains his eyes in badly lighted rooms. His nerves are affected by lack of wholesome outdoor play or by the constant risk of accident which he runs by playing in the street. Much intemperance and juvenile delinquency are said to be due to cheerless homes and lack of play.

Some of the essentials of a healthful home are:

Sunshine
Fresh Air
Uncontaminated water
An adequate heating system
Sanitary toilets

Without all of these conditions, the health of the family is endangered. Of course, instruction of the family as to how

to take advantage of and use these facilities is even more important.

Before renting a house or apartment, the tenant should make sure—

1. That all the rooms are light and have plenty of air.
2. That there are fire-escapes outside his own windows (in case of an apartment).
3. That there is a sanitary toilet within the house or apartment.
4. That there is a sink with running water in the kitchen.
5. That the house is kept clean and that the landlord keeps the property in proper condition.
6. That there is a back yard (if possible).

Conditions which cause discomfort and may cause illness are:

Leaky plumbing.

Faulty flow of water at the sink and for the toilet flush.

Piles of garbage or other rubbish left lying about in cellar, hall, courtyard, area or air shaft.

Repapering walls without removing the old layers of wall-paper. (It is often wise to have walls in a large apartment house painted instead of papered, since wallpaper is a favorite hiding place for bedbugs.)

Conditions which constitute fire hazards are:

Insufficient fire escapes.

Fire escapes that are blocked with articles.

Rusty or broken fire escapes.

A roof door or roof scuttle kept locked.

Rags, feathers, straw, excelsior, papers or other inflam-

mable material stored in the cellar or any other part of the building.

Conditions which may cause accidents are:

Broken stairs or loose or broken stair rails.

Loose plaster.

Torn carpets or oilcloth on the stairs or on hall floors.

Housing has long been regarded as a matter concerning public health and public welfare. As a public problem it has been attacked in two ways: (1) By laws requiring dwellings to conform to certain requirements and (2) By housing developments providing healthful living quarters at moderate rental.

Housing laws have accomplished much in some cities and states in doing away with the worst features of bad housing. The stricter laws regulate definitely the lighting, ventilation and sanitary conditions of buildings, specifying among other things, the proportion of window space to wall space, width of air shafts and courts, proportion of open lot space, lighting and drainage of cellars, type of plumbing and fire protection equipment.

Another way to prevent poor housing is obviously to provide good housing. Building on a large scale and limiting returns on the money invested to a low rate seem to be the chief factors in furnishing homes at moderate rental. The serious shortage of houses during and since the war hastened large-scale model housing efforts. Several big industries have erected model villages for their employees. Experiments of home building associations and better housing leagues in a number of cities have pointed the way toward this method as a possible solution of housing problems. For example, in Cheyenne, Wyoming, a home building fund was raised in 1920 through the efforts of the Cham-

ber of Commerce. As a result, houses were built and sold at cost on an easy payment plan. In Cincinnati a model housing village is being erected to meet the needs of people of moderate means. The village has been laid out according to modern principles of town planning and provides generously for recreation fields, parks and children's playgrounds. Rentals for houses erected so far range from \$35 a month for a four-room apartment to \$75 a month for a seven-room detached house. At a time when rents in and around New York City had risen to a point almost beyond belief, the Metropolitan Life Insurance Company undertook to provide apartments that should rent for \$9 a room per month. Apartments were built providing living quarters for 2,125 families. These apartments are of a type that would rent for from \$15 to \$30 per room per month if erected by speculative builders.

Housing developments and the suburbanization of industries in England and in other European countries have been aided by government subsidies. The attractive garden suburbs that have been built in England in the last few years show what town planning can do to make life livable and point to the large scale development of such suburbs with community recreation facilities as a way out of the misery of crowded cities.

HYDROPHOBIA

(See *Rabies*.)

HYPERTROPHY OF THE HEART

(See *Heart*.)

HYSTERIA

The hysterical person is a grown-up child, in other words, a person who cannot be depended upon to practice self-control. Hysteria usually finds expression in some unusual physical activity or abnormality. It may take the form of strange fits or convulsions, of paralysis, of blindness, of deafness. It is, in part, an attempt unconsciously to gain attention and sympathy on the part of the patient. Such cases usually yield most readily to treatment when the patient is removed from the family or circle of friends by whom he has been surrounded. The essential in treatment, however, is not so much a change in environment as a study of the patient's mental state and an effort by the physician to find out what is causing the hysteria. An element of the cure is usually to find something in which the patient can learn to excel, so that he may attract attention in normal rather than abnormal ways.

Of course only the physician and the nerve specialist are fitted to tell whether a disorder is hysterical or whether it has a physical cause.

ICE

(See *Water*.)

ICE CAP

(See *Home Nursing*.)

IMMIGRATION AND DISEASE

(See *Bubonic Plague* and *Cholera*.)

INDIGESTION

The term indigestion is used to cover all the unpleasant symptoms that occur when the digestive apparatus is not, or at any rate does not seem to be, working smoothly. These symptoms may be very misleading. They are often distress signals indicating trouble not in the stomach, but in some other part of the body. Tuberculosis, cancer, disease of the heart and kidneys, chronic appendicitis, gastric ulcers, uncorrected eye defects and eyestrain, disorders of the thyroid gland and other diseases may be accompanied by actual or apparent disturbances of digestion. Hence, a person who is suffering from what he calls "indigestion" must find out first of all what part of his body is in distress.

If a thorough examination by a physician reveals no organic disorder, the patient should look to his habits of living for the cause of his suffering. He may be simply eating too much, or he may be eating food which does not agree with him. In general, greasy foods and poorly cooked foods are difficult to digest. (See *Diet*.)

It is equally important for the person who has indigestion to consider how and when he is eating. Good eating habits require a person to take his meals regularly at certain hours, to refrain from eating between meals, to eat slowly and to be in an unhurried state of mind while eating. It is wise to go without food or to eat very lightly when in a disturbed emotional state. Violent physical exercise or intense mental effort, immediately after eating, is likely to disturb digestion by drawing the blood away from the stomach to the muscles or to the brain, as the case may be. For this reason, most people who are working through the day do

well to eat their heartiest meal in the evening after the day's work is done.

There is no health subject on which so much advice is given as the subject of indigestion. Every day a new food fad is promoted. There are those who advise eating no animal foods; there are those who advise eating only raw foods; there are those who advise two meals a day. Probably more patent medicines are sold for indigestion than for any other disorder.

A safe way through this maze of advice is sometimes difficult to steer. The experience of the majority of people and the studies of scientists show that as a rule people can advantageously use a certain amount of animal food; that the stomach of civilized man has become adapted to eating certain types of food cooked and that three light meals a day are better than two heavy ones. The habit of dosing the stomach with digestion medicines is dangerous. Only a physician can tell whether or not the digestive juices need artificial help.

Sharp pain in the abdomen should receive the immediate attention of a physician. In children, it may be a symptom of one of the children's diseases. It may be a warning that a dangerous poison has been taken into the stomach. Again it may indicate gall stones, an inflamed appendix or one of several other diseases.

There is a persistent type of indigestion that defies usual methods of treatment. It is due to an over-active, over-sensitive, nervous system. Many persons who think they are sufferers from stomach disorders are in reality victims of hurried, feverish lives and faulty mental habits. Rest may be the only treatment needed. Sometimes the attention

of a nerve specialist is required. (See *Constipation, Diet and Mental Health.*)

INDUSTRIAL DISEASES

(See *Carbon Monoxide Poisoning, Fatigue, Lead Poisoning, Mercury Poisoning, Phosphorus Poisoning, Working Conditions Injurious to Health.*)

INFANT MORTALITY

In 1923 out of every 1,000 babies born in the United States, approximately 77 died before they were a year old. An analysis of the causes of these deaths reveals that for 17.8 per cent. death was due to premature birth; for 14.7 per cent. to one of the respiratory disorders, such as pneumonia, bronchitis and tuberculosis; for 12.6 per cent. to injury at birth; for 4.1 per cent. to the communicable diseases of childhood. Among other causes were syphilis, erysipelas, convulsions and tetanus.

Once those seventy-seven deaths per thousand births might have been regarded as a necessary loss of life. In the light of modern knowledge, a large number of them were totally unnecessary, the result of neglect and ignorance. Emerson * estimates that half the present loss of babies in their first year could be prevented by proper care. Breast feeding would save a large number of the babies who die every year. Among those who give up the struggle during the first month of life are many who have not had a chance because the mother did not have the care she needed before the baby was born. The health of the mother, and her instruction as to proper care for herself and her baby are very important factors.

* Introduction to "Child Health Library," by Haven Emerson.

A baby-saving experiment conducted by the Metropolitan Life Insurance Company furnished significant evidence as to infant mortality. The place chosen was Thetford Mines, a small town in the Province of Quebec. A maternity center was opened, equipped with a staff of three nurses and a doctor. Mothers brought their babies here for advice regarding their care, and prospective mothers came for pre-natal care. Here a course of sixteen talks was given, beginning with the reasons for pre-natal care and covering child care through the pre-school period. Frequent visits were made by the nurses to the homes of the prospective mothers and homes where there were sick babies. The results of this kind of care for mothers and infants are best shown by statistics. In 1923 only 40 babies died of approximately 400 born, as compared with 120 out of 400 born that died in 1920 in this town.

A few years ago the Federal Children's Bureau set up a "Baby Aristocracy." Any baby could be admitted who met the following five requirements:

1. The father must have earned a fair wage.
2. The mother must not have been gainfully employed during the year before or the year after the baby's birth.
3. The mother must have had at least fair medical care when the baby was born.
4. Both father and mother must have been able to read and write.
5. The baby must have been living in a clean, airy, not overcrowded home.

The Bureau applied these tests to the 1,210 babies born in one year in a Massachusetts manufacturing city. Only

205 could qualify. The mortality rate among this aristocracy of babies was 38 points lower than the rate for the excluded 1,005.

Saving the lives of babies is largely a matter of giving every baby a square deal. Chief among the circumstances that cheat a baby out of a fair chance for health are:

Unhealthy parents, including untreated syphilis;

Ignorance on the part of the mother of the need of avoiding excessive activity during the last three months' pregnancy, which leads to premature birth;

Lack of medical advice and care during pregnancy;

Inadequate, or unskilled, attendance at birth;

Too rapid resumption of normal activities after birth of child;

Neglect of breast feeding;

Employment of mother during the first year of child's life, resulting in lack of personal care of the baby;

Ignorance of the mother as to how to take care of a baby, including lack of scrupulous cleanliness, and failure to recognize the importance of professional advice for apparently trivial ailments;

Faulty feeding when artificial feeding is necessary;

Impure milk;

Syphilis, as a congenital disease;

Communicable diseases.

Given, then, healthy parents, intelligent care during its pre-natal life, proper feeding, and a clean, airy home, a baby's chances of living are excellent. Saving the lives of the babies thus reduces itself to educating parents, to providing facilities for giving proper care to mothers and babies in every part of the country and to bettering living conditions.

Measures recommended are:

Pre-natal care.

Hospitals for premature infants.

Health centers and milk stations.

Educational clinics.

Public health nursing.

Encouragement of breast-feeding.

Competent medical supervision of infancy.

Clean milk.

Pasteurization of milk.

Better artificial feeding when necessary.

Better housing and elimination of crowded tenements.

Cleanliness.

Sanitary isolation from dysentery and other intestinal diseases, also from influenza, common colds, tuberculosis, pneumonia and the contagious diseases of children. (See *Infants, Care of.*)

INFANTILE PARALYSIS (Poliomyelitis)

The great majority of cases of this disease are found among children under five. Cases among persons over twenty are comparatively rare. In most instances the patient is left in a semi-paralyzed condition from which recovery is very slow. During the widespread epidemics of 1915 and 1916 many children died and thousands were crippled.

The disease is difficult to control, since the germ has not for a certainty been discovered and since it is not definitely known how the disease is spread. During epidemics children should be kept away from public gatherings. Every case should be strictly isolated and every article coming in contact with the patient should be thoroughly disin-

fect. Special attention must be given to diet to prevent disorders of stomach or intestines. Dr. E. C. Rosenow of the Mayo Clinic has a serum for the treatment of infantile paralysis, but it has not been generally accepted. A Harvard medical commission recently made a five-year study into the causes and treatment of this disease. Its members believe they have found a method of after-treatment based on "muscle training, though even under the most favorable conditions progress is apt to be slow." Operative treatments, though performed several years after illness, are frequently quite successful, even when perfect cures are not to be expected.

INFANTS, Care of

Babies need attention and care, if they are to grow. They need to be kept warm, to sleep, to be kept clean, to have food regularly, to drink a little cool water, to have fresh air, to get sunshine. They should not be picked up when they cry, unless there is some definite reason for giving them attention. They should be breast-fed, if possible, for there is no food that agrees with a baby as well as mother's milk. A physician should be consulted when anything is wrong or when the mother is in doubt about the right kind of food for the baby. Babies should be weighed at regular intervals to see if growth is satisfactory. In larger towns and in cities, mothers can take their babies to baby clinics. Here the babies are weighed and examined and mothers are instructed in routine care. If artificial feeding is necessary, a formula is prescribed. Detailed instructions for the care of a baby from birth can be secured free by writing to the United States Children's Bureau, Washington, D. C. (See *Infant Mortality, Milk, Rickets.*)

INFECTIONS

(See *Focal Infections* and *Blood Poisoning*.)

INFLUENZA OR GRIPPE

The signs of influenza are fever, headache, pains in the back or legs, with a cough, often sneezing and sore throat. It may be mild, lasting only two or three days. It may be severe, running quickly into pneumonia. When a person is attacked by this disease he should go to bed at once and send for a physician. A stay in bed of two or three days after the fever has subsided is also a wise precaution.

Every precaution should be taken to protect others from catching the disease. The patient should never sleep with another person. He should always cough and sneeze into a handkerchief. Since, at the outset, the symptoms of influenza are the same as for a common cold, one should never be careless about coughing and sneezing in public without covering the nose or mouth. A condition which develops into a mild cold in one person may develop into influenza or pneumonia in another. The actual cause or causes of epidemic influenza are not definitely known.

An influenza patient should have plenty of air and sunlight in his room and should be kept on a very light diet. Especial care should be taken during the convalescent period to keep him from over-exertion and from becoming chilled, for this is the period when neglect may be punished by a severe attack of pneumonia.

During an epidemic every one should avoid crowded, ill-ventilated places, should dress warmly, keep dry, eat simple food, be sure to keep the bowels in a healthy condition and avoid getting over-tired. Vaccines have been tried, but as yet without success. (See *Colds* and *Pneumonia*.)

IN-GROWING NAILS

Sometimes the nails, particularly of the toes, spread laterally and cut into the flesh, causing great pain. This painful trouble is usually brought on by ill-fitting shoes. Shoes that are too short and shoes that have pointed toes and high heels may cause in-growing nails. In early stages relief may be obtained by removing the pressure. More serious cases require the attention of a doctor, especially when the site of the irritation is infected.

INSECT STINGS

Treatment: If you can see the sting in the flesh pull it out. Apply ammonia water and later cloths wet in cold water.

INSOMNIA (Sleeplessness)

Sleeplessness is largely a bad habit. It may be caused by too little fresh air in the sleeping room, by not getting enough exercise to make the body physically tired, by carrying one's worries to bed or by just being anxious about sleeping. Frequently, a person for some special reason will happen not to sleep some night. The next night when he goes to bed, he starts wondering whether he is going to sleep or not, watching himself very intently for signs of sleeplessness. Thus the habit is begun.

Sleep should never be wooed. The very act of seeking for sleep seems to make the brain contrary. Furthermore, there is no particular reason for worrying about the loss of a little sleep. Provided mind and body are both at rest, one can gain great refreshment from just lying quietly in bed. The person who does not become anxious over not sleeping gains in two ways. He gets rest even if he does

not sleep and he sleeps the sooner for not letting himself worry. Taking drugs for sleeplessness starts a habit of relying on artificial inducements to sleep and thus delays nature all the more in righting itself.

The best way to insure a night of restful sleep is:

1. To exercise in the open during the day and just before going to bed.

2. To eat a wholesome, not too heavy, evening meal without stimulants.

3. To sleep on a porch or in a room with all the windows wide open.

4. To dismiss all worries from one's mind. A good way to do this is to read a while before going to sleep from an interesting but not too exciting book.

Drinking a cup of hot milk just before going to bed often proves helpful to a person who has the lying awake habit.

Insomnia that does not respond to simple, common sense measures is likely to be an indication of nerve disorder and should receive the attention of a specialist in nerve disorders or a mental hygiene clinic.

INTESTINAL POISONING

(See *Constipation.*)

IODINE TABLETS

(See *Goiter*)

ITCH

(See *Scabies.*)

IVY POISONING

Treatment: First wash off with soap and water, then with alcohol. A dressing kept soaked in cold soda bicar-

bonate solution bandaged on the affected part will relieve pain and itching and help to prevent the spread of the poisoning to other parts of the body. For a bad case of ivy poisoning, a physician should be consulted, and a vaccine is sometimes found to be helpful.

JAUNDICE

Jaundice is not a disease. It is a sign that the liver is not functioning properly and that the bile is being absorbed by the tissues, giving them the first noticeable symptom of the condition—the characteristic yellow color. This yellow tinge is first noticed in the whites of the eyes. Later it may become generally distributed over the entire body. Jaundice should never be considered as unimportant. If it persists even to a slight degree, a physician should be consulted.

JOINT DISEASE

(See *Gout*, *Rheumatism* and *Tuberculosis*.)

KIDNEYS

(See *Bright's Disease*.)

KITCHENS

(See *Home Hygiene*.)

LARYNGITIS

(See *Colds*.)

LEAD POISONING

People who drink water conducted through lead pipes and workers in certain industries and trades are often afflicted with a form of slow poisoning due to the long-continued absorption of lead into the system. Of all of the

group of diseases known as "Occupational" this is the most common. So frequent is lead poisoning among painters it is often called "painter's colic."

The signs of this disease are loss of strength, severe cramps in the abdomen, constipation, pallor and, in the later stages, paralysis, which is especially likely to attack the wrists and forearms. The early symptoms of lead poisoning are often vague and usually confused with other diseases. Sometimes, however, the onset is severe and death ensues quickly. Often a person thinks he is suffering from chronic dyspepsia or rheumatism when in reality he is being slowly poisoned by lead. It is, therefore, highly important that a person who is working at an occupation where there may be a danger of lead poisoning or drinking water that may contain lead should consult a doctor promptly if he has any of the symptoms mentioned and should have thorough, periodic medical examinations.

Lead poisoning is not only serious in itself, but it often leads to other troubles. Hardening of the arteries, kidney trouble, ear trouble and even blindness are some of the afflictions lead poisoning may leave in its train. Lead poisoning is often called a race poison because of its effects on women workers. It is known to be a frequent cause of sterility, miscarriage, still birth and infant mortality. In most European countries women have, for these reasons, been excluded entirely from the more dangerous lead trades. In the United States, partly because the number of women, especially married women, employed in these industries is few, no State excludes women from these trades and in only six states are there any protective regulations regarding the employment of women in lead trades.

The industries in which there is danger of lead poisoning

A POPULAR ENCYCLOPEDIA OF HEALTH 193

are many. Among them are painting (especially indoor painting), printing, the manufacturing of paints and varnishes, of certain kinds of enamel and of storage batteries, making tinware, linoleum and oilcloth, glazing pottery, making plumbers' supplies, rubber manufacturing, tilemaking and zinc smelting. The prevention of lead poisoning is both a personal and a public health question. The individual can protect himself to a certain extent by wearing over his nose and mouth a device known as a respirator, to keep him from breathing lead dust or dangerous fumes; by always wearing gloves when working with lead material or material containing lead compounds, by washing his hands thoroughly before eating and by having frequent medical examinations.

There is little reason why workers should run a serious risk of lead poisoning. Progress has been made in recent years in this country in controlling the dangerous lead industries, but according to Dr. Alice Hamilton of the Harvard Medical School, the United States is still behind Great Britain and Germany in caring for the health of its lead workers. In only a few states are lead industries required to protect their workers. It is possible to render most lead industries relatively safe by taking the following preventive measures:

1. Removal of poisonous fumes.
2. Keeping down dust by wet processes and removal by exhaust ventilation.
3. Wearing respirators.
4. Providing lockers to protect street clothing from lead contamination.
5. Providing adequate washing facilities.
6. Frequent medical examinations.

Sandpapering, one of the most dangerous parts of a painter's work, can be made safe simply by using mineral oil to moisten the paper and catch the dust. The Brotherhood of Chicago Painters requires of employers that they shall furnish respirators and gloves, that there shall be an allowance of five minutes for wash time in every four hours of work and that men shall be furnished with hot water, soap and towels.

LENGTHENING LIFE AND ENRICHING LIFE

"Men do not live long enough; they are, for all the purposes of high civilization, mere children when they die," says Bernard Shaw. One can readily appreciate how wasteful is a civilization in which the average length of life is only forty years. All the expense of care in childhood, of education, of training for a profession seem wasted if a person is to die at the height of his power. Yet, in 1855 this was the condition in this country. Since that time, eighteen years on the average have been added to the life span.

Increased length of life has followed the development of preventive medicine. We have learned how to save the lives of babies. In 1900, 170 out of every 1,000 babies in the United States died before the first birthday. In 1923 this number had been reduced to 77. We have learned how to prevent tuberculosis and how to cure it in its early stages. The "white plague," as it was justly named, takes less than half as many lives to-day as it did in 1900. Typhoid fever is literally being driven from the face of the earth. Diphtheria, formerly one of the worst enemies of childhood, is another disease that modern medicine is wiping out. The type of treatment which is making diphtheria powerless is

now being applied to scarlet fever and may be extended to other contagious diseases of childhood.

Adding years to people's lives, however, is worth nothing, unless those years can be made productive and enjoyable. We have heard a great deal in the past about lowering mortality rates. Now we are beginning to hear more about lowering rates of morbidity, that is sickness rates. The results of the Metropolitan Life Insurance Company Sickness Surveys show that on any one day $2\frac{1}{4}$ per cent of the population of the United States may be counted as being ill. This represents a serious lowering of national efficiency and an incalculable amount of individual hardship and unhappiness. So far, the achievements of preventive medicine in this country are largely in the field of child health. There is still an alarming waste of health and life in middle age. In other words, we wear out too young.

The concern of modern medicine should be to prolong "the period of exuberant vitality," to borrow Dr. Fisk's form of expression. "Unless we can extend and improve the period of high vitality," says Dr. Fisk,* "unless we can lift the physical handicaps that are now imposed upon us as age advances, there would be some logic in the proposal that has been made that life be shortened as to its later stages. What we must vigorously combat is the all too common medical attitude towards this problem, the disposition to regard the defects and impairments at each advancing decade as normal to the time of life."

There is need, then, for more rapid development of the science of keeping people well, especially of preventing loss of vitality and the general running down of the body's machinery in middle life. This is gradually coming about

* "Prolonging Human Life," by Eugene L. Fisk, *Yale Review*, July, 1920.

through better understanding of focal infection, of the functions of the glands, of diet and of general preventive medicine, and through educating people to the necessity for regular medical examinations.

Mental hygiene has shown that keeping people well is also a problem of keeping people happy. Shorter working hours, more opportunities for satisfying recreation, good housing and a general knowledge of how to cultivate mental health are all necessary factors in prolonging the vitality and efficiency of human beings.

The Life Extension Institute, with head offices in New York City, is a conspicuous institution in the field of prolonging and enriching human life. Dr. Fisher and Dr. Fisk describe its purpose as "the extension of human life, not only as to length, but also, if we may so express it, as to breadth and depth." * It offers for moderate fees to individuals, to industries and other groups, the services of competent physicians in giving thorough physical examinations. This service has afforded the Institute the opportunity to become an important research body in the field of preventive medicine.

Life insurance companies have an exceptional opportunity for research in the field of life extension and for educating their policyholders in the principles of preventive medicine. Since 1909 the Metropolitan Life Insurance Company has engaged in this service in an intensive way. Its welfare work includes a nursing service for industrial policyholders in 4,000 cities and towns (making nearly 3,000,000 nursing visits a year to such policyholders), free periodic medical examinations for certain types of policyholders, the printing and distribution of free leaflets on healthful living and dis-

* "How to Live," by Irving Fisher and Eugene L. Fisk.

A POPULAR ENCYCLOPEDIA OF HEALTH 197

ease prevention, a health magazine for policyholders, health exhibits, health films, and demonstrations of methods of fighting disease in selected communities. Distribution figures for 1925 give an idea of how extensive is this health education. In the one year a total of 49,182,126 pieces of health literature were distributed: 2,190,000 by social agencies, 675,000 in schools, 800,000 by health officers, and the rest by the agency staff of the company into the hands of the policyholders.

Agents of the Company's Welfare Division assist communities in such activities as campaigns to combat epidemics and to promote vaccination and diphtheria immunization, in baby weeks and clean-up campaigns. They also work for adequate public health legislation and appropriations for tuberculosis sanatoria and other community health equipment.

It is difficult to estimate the full results of the Metropolitan's efforts to prolong and enrich human life. However, some idea may be conveyed by comparing mortality statistics. For example, in 1925 there were 66,288 fewer deaths among the company's policyholders than would have been the case if the 1911 death rate had prevailed. Over a period of 11 years the average length of life of policyholders was increased by nearly $8\frac{1}{2}$ years. These figures have added significance when compared with the gain of $5\frac{1}{2}$ years in average length of life for the general population of the United States for the same period.

The John Hancock Mutual Life Insurance Company of Boston, Massachusetts, calls its health work appropriately a "Life Conservation Service." This service includes such activities as the examination of certain groups of policyholders, education of the public in the prevention of diph-

theria, efforts on behalf of accident prevention, keeping in touch with developments in preventive medicine, a nursing service for industrial policyholders and general coöperation with public health authorities. The Equitable, Prudential, Travelers' and other companies are doing valuable work in issuing and distributing educational literature on health subjects.

Widespread international interest in this field is evidenced by the Health Service Bureau of the Wesleyan and General Assurance Society of Birmingham, England, and other British companies; the health work, including nursing service that two Australian companies have established and the Health Consultation Service and Visiting Nurse Service conducted by the Japanese Post Office in conjunction with industrial insurance.

LEPROSY

The name of this disease has been spoken with horror since almost the beginning of history. This is due to the loathsome appearance of a leper, and to the prolonged course and supposed contagiousness of the disease. According to the Mosaic Law, a leper had to stay outside the camp, wear a certain kind of dress, and cry "Unclean! Unclean!" when any one came near him. In the Middle Ages lepers were forbidden to enter churches or market places and were forced to go about ringing bells or beating clappers.

In civilized countries to-day leprosy has ceased to be the plague it used to be before people had learned the importance of personal cleanliness and public sanitation. It is also now considered less easily carried from one person to another than it used to be. No one knows exactly

how leprosy is spread, but direct and somewhat prolonged contact with the patient seems to be necessary. It is also suspected that insects may carry the germ. As is true in the case of tuberculosis and other diseases, a leper can, to a large extent, keep from spreading the disease by strict attention to cleanliness and by protecting others from contact with discharges from the nose and throat and from body sores.

The people of certain races and certain countries are apparently more susceptible to leprosy than are others. This is thought to be due to different standards of living and cleanliness rather than to hereditary, racial traits, the disease tending to disappear as standards of living improve. The largest number of cases are now found among the natives of the Hawaiian Islands. There are also many cases in China and Japan, in India, in the Philippine Islands and in Southern Africa. In Central Europe the disease has become rare. Strict vigilance is exercised by immigration officials to keep leprosy from being carried to the United States from other countries. The law requires that if an alien leper is brought here he must be taken back directly by the vessel on which he came.

Cases of leprosy in this country have occurred mainly in three definite sections: Among the Scandinavians in the region of the Great Lakes, among the Orientals on the Pacific Coast, and on the Gulf Coast, particularly in Louisiana, Texas and Florida. In the first two sections cases are largely imported from other countries, but on the Gulf Coast most of the cases are native.

The modern equivalent of the bell and clapper and leper's robe of the Middle Ages is the sanatorium for lepers, called the leprosarium, where a patient may be kept from giving

the disease to other people and at the same time receive good care. The United States Government supports a national leprosarium located at Carville, Louisiana.

Leprosy was formerly thought to be incurable. A method of treatment with chaulmoogra oil has recently been used with encouraging results. Some cases may be arrested by the type of treatment given a tuberculous patient—good food, fresh air and cleanliness.

LICE

(See *Typhus Fever* and *Vermin*.)

LIFE INSURANCE COMPANIES, HEALTH WORK OF

(See *Lengthening Life* and *Enriching Life*.)

LIGHTING

(See *Eyes*.)

LOCKJAW or TETANUS

The germ of lockjaw, or tetanus, is usually introduced into the body through an injury, which tears or punctures the flesh without leaving it as open to the air as is the case in the ordinary abrasion. Unfortunately this germ does not need air to grow; hence the deep-puncture wounds are the most dangerous type. Wounds of the hands and feet are most likely to become infected with tetanus. Rusty nails, farm implements, toy pistols, splinters and pins are articles that often carry the germ. Also when dust and dirt have been forced under the skin in an accident, there may be danger of tetanus infection. Anything about a farm or garden is especially likely to be a source of infection, since the germ may be discharged from the intestines of cows, horses and sheep. Through a very resistant "spore" or a

germ in a dormant state, the infective agent may survive in soil for a long time.

The disease is commonly called lockjaw, because the muscles of the jaw and neck grow rigid, the mouth becoming firmly locked. Death results in from fifty to eighty per cent. of cases. The injection of tetanus antitoxin immediately after a wound is received has saved many lives by preventing the development of the germs in the wounds. The antitoxin is also used in treatment, but not with a high degree of success.

Tetanus can be prevented, if proper care is always taken of wounds that are in danger of infection. In all wounds through dirty skin, and such wounds as allow dirt to enter the tissues, there is this danger. After every injury, no matter how slight, the flesh should be thoroughly cleansed with hot water, then washed out with an antiseptic solution. The kind of wound that is likely to be infected with tetanus should always be shown to a physician to see if antitoxin injection is necessary. (See *Accidents*.)

LOCOMOTOR ATAXIA

(See *Syphilis*.)

LONGEVITY

(See *Lengthening Life and Enriching Life*.)

LUMBAGO

Lumbago is characterized by pain, usually sharp and cramplike, and stiffness in the muscles of the lower back. People past middle age are more likely to be attacked by it. Exposure to cold and dampness, exhaustion and muscle strain are generally thought to be causes. Rest and the

application of heat are probably the most effectual treatments. Massage and electrical treatment also afford relief. It is important that the bowels be kept open. (See *Rheumatism*.)

MALARIA

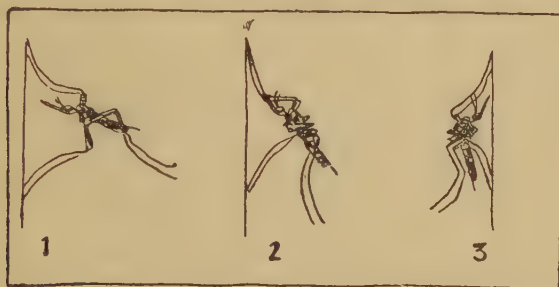
"Chills and fever," is the old-fashioned and highly appropriate name for the commonest form of this disease. Usually the first symptom is a severe chill, which is followed by a high fever and headache. A peculiar feature of the usual type of malaria is the fact that it goes and comes, attacks often recurring every other day. Children frequently have no chill, but simply fever with headache and vomiting. Sometimes fever is continuous, resembling typhoid.

Our great-grandparents expected annual attacks of chills and fever in the late summer or fall quite as much as they expected spring housecleaning. The disease has become far less common since the discovery that the germ is carried by a certain kind of mosquito, called the anopheles mosquito. War upon malaria resolves itself into careful screening of houses and destruction of mosquitoes breeding in fresh-water pools, stagnant ponds and similar collections of water. It is still common in this country in many of the southern states and in restricted low-lying sections of a few northern states. There is, however, no reason why the disease cannot be banished, especially from towns and villages, if communities will unite in making war on the anopheles mosquito.

New York State offers an illustration of a striking reduction in the occurrence of malaria. In 1903 there were

90 deaths from malaria in the State, in 1913 there were 13, in 1923 there were 7.

People living in regions infested with the anopheles mosquito can protect themselves against the disease by taking doses of quinine at the malarial season. This treatment



*Resting posture of mosquitoes; 1 and 2 Anopheles; 3 Common Mosquito.
(After Sambon.)*

should be followed only under the direction of a physician. Quinine is also the accepted remedy for the disease.

MALNUTRITION

Malnutrition is a term used to describe the condition of a person who is not getting enough or the right kind of food or enough nourishment from his food to supply his body needs. It is a particularly common condition in children. A child may be eating three "square" meals a day and still be undernourished. This may be due to lack of some essential type of food, to irregular eating, to over-excitement or to some wrong physical condition that is preventing the child from getting full value from the food he eats. For example, a child may suffer from this condition if he is constantly eating between meals, if he drinks coffee

AVERAGE WEIGHT FOR HEIGHT TABLE
For Girls from Birth to School Age

Height (inches)	1 Mo.	3 Mos.	6 Mos.	9 Mos.	12 Mos.	18 Mos.	24 Mos.	30 Mos.	36 Mos.	48 Mos.	60 Mos.	72 Mos.
20	8											
21	9	10										
22	10	11										
23	11	12	13									
24	12	13	14	14								
25	13	14	15	15								
26		15	16	17	17							
27		16	17	18	18							
28			19	19	19	19						
29			19	20	20	20						
30			21	21	21	21	21					
31				22	22	23	23	23				
32					23	24	24	24	25			
33						25	25	25	26			
34						26	26	26	27			
35						29	29	29	29	29		
36							30	30	30	30	31	
37							31	31	31	31	32	
38								33	33	33	33	
39								34	34	34	34	34
40									35	36	36	36
41										37	37	37
42										39	39	39
43										40	41	41
44											42	42
45												45
46												47
47												50
48												52

Prepared by Robert M. Woodbury, Ph.D.
Children's Bureau, U. S. Department of Labor.

AVERAGE WEIGHT FOR HEIGHT TABLE
For Girls from 5-18 Years.

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.
38	33	33												
39	34	34												
40	36	36	36											
41	37	37	37											
42	39	39	39											
43	41	41	41	41										
44	42	42	42	42										
45	45	45	45	45	45									
46	47	47	47	48	48									
47	49	50	50	50	50	50								
48		52	52	52	52	53	53							
49		54	54	55	55	56	56							
50		56	56	57	58	59	61	62						
51			59	60	61	61	63	65						
52			63	64	64	64	65	67						
53			66	67	67	68	68	69	71					
54				69	70	70	71	71	73					
55				72	74	74	74	75	77	78				
56					76	78	78	79	81	83				
57					80	82	82	82	84	88	92			
58						84	86	86	88	93	96	101		
59						87	90	90	92	96	100	103	104	
60						91	95	95	97	101	105	108	109	111
61							99	100	101	105	108	112	113	116
62								104	105	106	109	115	117	118
63									110	110	112	116	117	120
64									114	115	117	119	120	122
65									118	120	121	122	123	125
66										124	124	125	128	129
67										128	130	131	133	133
68										131	133	135	136	138
69											135	137	138	140
70											136	138	140	142
71											138	140	142	144

Prepared by Bird T. Baldwin, Ph.D., and Thomas D. Wood, M.D.

AVERAGE WEIGHT FOR HEIGHT TABLE

For Boys from Birth to School Age.

Height (inches)	1 Mo.	3 Mos.	6 Mos.	9 Mos.	12 Mos.	18 Mos.	24 Mos.	30 Mos.	36 Mos.	48 Mos.	60 Mos.	72 Mos.
20	8											
21	9	10										
22	10	11										
23	11	12	13									
24	12	13	14									
25	13	14	15	16								
26		15	17	17	18							
27		16	18	18	19							
28			19	19	20	20						
29			20	21	21	21						
30			22	22	22	22	22					
31				23	23	23	23	24				
32				24	24	24	25	25				
33					26	26	26	26	26			
34						27	27	27	27			
35						29	29	29	29	29		
36							30	31	31	31		
37							32	32	32	32	32	
38								33	33	33	34	
39								35	35	35	35	
40									36	36	36	36
41										38	38	38
42										39	39	39
43										41	41	41
44										43	43	43
45											45	45
46												48
47												50
48												52
49												55

Prepared by Robert M. Woodbury, Ph.D.
Children's Bureau, U. S. Department of Labor.

AVERAGE WEIGHT FOR HEIGHT TABLE

For Boys from 5-19 Years.

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.	19 Yrs.
38	34	34													
39	35	35													
40	36	36													
41	38	38	38												
42	39	39	39	39											
43	41	41	41	41											
44	44	44	44	44											
45	46	46	46	46	46										
46	47	48	48	48	48										
47	49	50	50	50	50	50									
48		52	53	53	53	53									
49		55	55	55	55	55	55								
50		57	58	58	58	58	58	58							
51			61	61	61	61	61	61							
52			63	64	64	64	64	64	64						
53			66	67	67	67	67	68	68						
54				70	70	70	70	71	71	72					
55				72	72	73	73	74	74	74					
56				75	76	77	77	77	78	78	80				
57					79	80	81	82	82	83	83				
58					83	84	84	85	85	86	87				
59						87	88	89	89	90	90	90			
60						91	92	92	93	94	95	96			
61							95	96	97	99	100	103	106		
62							100	101	102	103	104	107	111	116	
63							105	106	107	108	110	113	118	123	127
64								109	111	113	115	117	121	126	130
65								114	117	118	120	122	127	131	134
66									119	122	125	128	132	136	139
67									124	128	130	134	136	139	142
68										134	134	137	141	143	147
69										137	139	143	146	149	152
70										143	144	145	148	151	155
71										148	150	151	152	154	159
72											153	155	156	158	163
73											157	160	162	164	167
74											160	164	168	170	171

Prepared by Bird T. Baldwin, Ph.D., and Thomas D. Wood, M.D.

and tea in place of milk, or is allowed to sit up late at night.

It has been estimated that fifteen to twenty-five per cent. of all the children in the United States are found in the malnourished class.

Every child should be weighed frequently and should have his weight checked up with a standard weight-for-height table. (See tables on pages 204 to 207.) If his weight falls much below the number of pounds a child of his age and height is supposed to weigh, and if he is pale and listless, a physician should be consulted. An under-nourished child is frequently an easy victim for certain infectious diseases. Of course, a child may show his proper weight, but still have nutritive disorders requiring medical attention.

(See *Calories, Diet, School Lunches, and Sleep.*)

MARKETING FOR SAFE FOOD

Marketing is perhaps one of the most important events in the housewife's day, for upon her intelligence in buying food may depend the health of the family. One realizes this best by following a housewife as she buys her supplies. First: What kind of a market does she patronize? She may go to a clean, well-aired store where all the food is kept screened, or in glass cases, where the sales force is required to observe cleanliness in handling the foods sold and where quality and freshness are demanded. Or she may go to a place that is cheaper, a little store on a side street, perhaps, where lower upkeep is reflected in lower prices but sanitation is still observed. Or she may patronize the small store or sidewalk vendor, whose ideas of cleanliness are primitive. Here the food is unprotected from the flies

that swarm in at every opening of the door. If the law permits, milk is scooped out of a can that is not always tightly covered or properly iced. The proprietor does not bother to cover his wares when he sweeps the store. He may live with his wife and children in a room back of the store and opening into it. The children run back and forth. One of them has a cough, but the mother hasn't bothered to investigate the cause of it. The housewife who buys here may save money, but she does so by constantly risking the health of her family. The first principle of good marketing is to select a clean market and a marketman who has a conscience about the food he sells. The health bureaus of some cities publish lists of retail stores and markets graded according to their regard for sanitation. Generally local reputation is a fairly reliable guide.

The housewife is protected to a certain extent against impure and unhealthful foods by the United States Government. Under the Pure Food and Drugs Act, food, except as provided by the laws, cannot be shipped from state to state if "it consist in whole or in part of a filthy, decomposed or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal or one that has died otherwise than by slaughter." Other provisions of this law are that food must not have any poisonous or harmful substance added to it, must not be "mixed, colored, powdered, coated or strained to conceal damaged condition or poor quality or to lower its quality or strength, and that no other substance may be substituted in whole or in part for the food being sold." The Federal Meat Inspection Act practically assures that meat which is shipped from state to state is free from disease and packed in a clean packing-

house by clean workers. It is inspected by inspectors of the Bureau of Animal Industry of the United States Department of Agriculture and stamped or labeled as inspected and passed. Meats not fulfilling the standards of this bureau are condemned and do not find their way into interstate commerce.

The Pure Food and Drugs Act has done much to bring about honest labels. If food is preserved with artificial preservatives, the label must state the quantity used; if it is a mixture or blend, the label must say so. The weight of the goods must also be marked on the labels. Thus, careful reading of labels is essential to wise buying. The law does not claim that mixtures, blends, or the use of certain colors or preservatives make the food less nutritious or less sanitary, but correct labelling makes it possible for the housewife to *know* just what she is buying.

Federal regulations do not apply to foods that are not shipped out of the state. More progressive states practice the same vigilance that the Federal law requires, and state laws are supplemented by city regulations for food handling. Some cities maintain municipal slaughter houses and municipal markets to insure to their people meat from cattle free from disease and slaughtered under sanitary conditions. Most of the larger cities have meat inspection services. In smaller cities uninspected meats from local slaughter-houses are sometimes sold. The housewife who wishes to buy wisely and safely will find out how thoroughly she is being protected by state and local regulations, and will try to find out something about the source of the meat she buys. She will look up the regulations in her city, concerning the sanitary conditions of markets and purchase her meats, fish, oysters and clams at the cleanest and most reliable markets.

By so doing, and with the additional safeguard of proper cooking, the housewife can protect her family against the dangers of infected and impure foods. She will find that it is economical not to buy fruit and vegetables that are specked with decay and she will wash all such foods thoroughly before serving them.

Valuable suggestions to housewives are to be found in standard books on marketing and household economics.

MASTOID BONE

MASTOIDITIS

(See *Colds* and *Focal Infections*.)

MATERNITY CLINICS

(See *Pre-Natal Care*.)

MEALS, How to Plan

(See *Diet*.)

MEASLES

Measles is one of the most highly contagious of diseases and still kills about 8,000 children in this country every year. It often starts with the same symptoms as a severe cold—sneezing, red and watery eyes, feverishness and a slight cough. On the fourth day a rash appears on the face and neck, which slowly spreads over the body. This rash has been described as resembling “flea bites on a solid dusky red background.” In about five days the rash fades away and the skin begins to peel. Peeling continues for about a week.

Measles is contagious from the time the first symptoms develop until a week after the rash appears. It is most

catching during the early stages. Hence, the moment a person is suspected of having the disease, he should be kept away from others and be examined by a physician. The germ is carried chiefly, if not altogether, by the discharge from the nose and mouth.

The patient must have plenty of fresh air, but his eyes should be protected from direct sunlight. Light food should be given and the bowels kept open. Special care is necessary when the patient is recovering, to prevent serious after-effects. The eyes and ears should be carefully watched.

Recently very promising results have been obtained in decreasing the likelihood of contracting the disease, and in lessening the severity of the illness, by the injection of those exposed with blood serum from other convalescent measles patients. The health officer or the physician will be able to advise with reference to the availability of this protecting serum.

MEAT

(See *Diet.*)

MEDICAL EXAMINATION

A generation ago people as a rule never went to a dentist except when they had a toothache. To-day intelligent people have the dentist examine their teeth at regular intervals whether they ache or not. In the same way it is only sensible to consult a physician not simply when alarmed by pain but as a regular, annual check-up on one's physical condition. A large percentage of serious illnesses and serious surgical operations might be avoided by this practice. A physician can often recognize danger signals long before they have become insistent enough to disturb the patient.

Heeding the first signals has saved many a person prolonged illness. Even the contagious diseases may be handicapped by this procedure, since certain of them are perhaps less likely to attack a healthy body than a weak sickly one.

What is more, a regular visit to a physician once a year is an economy measure. The constant care of a nurse and constant medical attendance for weeks at a time is a tremendous expense, which has to be met by some one when a person is seriously ill. A surgical operation is necessarily an expensive cure. A trip to a physician's office once a year in comparison is a trifling expense and a visit to a clinic even less expensive.

Perhaps the day is here when intelligent people consider the man lacking in common sense who goes to a physician only for a cure for aches and pains, instead of for prevention of future ills, for cure of beginning sickness, or for advice on how to continue to live a long and healthy life.

MELANCHOLIA

The victim of melancholia is, as the name implies, plunged in melancholy. He has all sorts of doubts and fears about the future. He thinks his outlook is hopeless. He may try to commit suicide. His digestion is usually affected and his appetite poor. His melancholia may in reality be simply a symptom of a genuine insanity.

The immediate cause of ordinary melancholia is usually grief or disappointment or a wasting illness. Frequently, back of the immediate cause is a line of ancestors weakened by bad habits or disease. Inheritance cannot cause the disorder, but can make one more susceptible to it. The cultivation of good mental habits and a life in which recreation and work are well balanced do much to offset inheritance.

Melancholia is often curable, if treatment is begun in time with a competent psychiatrist. Removal from home environment to a good sanitarium is usually advisable.

MENOPAUSE

The menstrual period ceases usually between the ages of forty and fifty. In very hot or very cold climates it may cease much earlier, even in the thirties. Women who have little vitality, or have some wasting disease, such as tuberculosis, or have borne many children may have the menopause at an early age. The change may be preceded by irregularity in the menstrual period and may be accompanied by disturbances of circulation or upset nerves. The nervous, high-strung woman is more likely to suffer at this time than a woman who has cultivated serenity and healthy mental habits. A woman whose general health is good is not likely to experience serious disturbance. A thorough examination by a physician at the approach of the menopause is advisable, and imperative for a woman who experiences any annoying symptoms. (See *Menstruation*.)

MENSTRUATION

A woman in normal health should be able to continue her usual activities during the menstrual period. She should, however, refrain from the more violent forms of exercise and be especially careful not to take cold. It is advisable for her, if possible, to take a little more rest than usual at this time, and avoid being on the feet more than is necessary. Young girls are sometimes given a morbid impression of menstruation which leads them to expect that they have to go to bed and be sick. Unless something is radically wrong

with a girl, she will feel better if she takes mild exercise at this time than if she goes to bed.

Often the best remedy for painful menstruation is to build up general health. Severe pain or an abnormally profuse flow should be brought to the attention of a physician. Disturbances of digestion at this time can often be prevented by eating simply and taking special care to keep the bowels open. Irregularity in menstruating is not uncommon during the first year or two after menstruation has begun or at the time it is about to cease. (See *Menopause*.)

MENTAL HABITS OF CHILDREN

Childhood impressions have been said to control the whole later development of a person, "even to the peculiarity of his style, his choice of a vocation, and of a wife, as well as the most insignificant subordinate affairs." In the very early years are laid the foundations which determine whether a child is to grow up into a useful citizen or a misfit, a contented person or a restless one, whether he is to be poised or is to "go off the handle" at every time of stress and strain. The mother who picks up the baby every time he cries may be starting her child on the road that leads to hysteria in later life. The ignorant nurse who frightens a child with stories of "bogies" may plant in the child's mind the seeds of serious later trouble. Not infrequently cases of nervous breakdown and even insanity can be traced back to frights received in early childhood from the bogey stories and behavior of nursemaids and other early associates.

Some of the tendencies that parents should be on the lookout for are:

1. Oversensitiveness. The child who is easily excited,

who takes his play too hard should live a very quiet life, should not be taken to movies or encouraged to "show off" and should have a great deal of sleep.

Another form of oversensitiveness is the tendency to take disagreeable experiences too hard, to shrink from unpleasant things that must be faced, to take punishment too keenly, to be overwhelmed by disappointment. Such a child should be patiently trained not to think too much about his own feelings and to take pleasure in doing hard things and overcoming his bugaboos. It is of greatest importance to find out *why* the child is abnormal, and in this the parent may need the physician's aid.

2. Timidity. The over-timid child should be taught the joy of being a "good sport" and should never be frightened into doing things or told terrifying stories. Of course, early training by the parent in good sportmanship will usually prevent the development of timidity. In older children, with bad mental habits already established, careful study of the child by a mental hygienist may be necessary to find out *why* he is timid and how the condition may best be corrected.

3. Tendency to Show too Much Fight. The child who resents discipline and fights against it should be shown that punishment results from wrongdoing and is not or should not be the act of a wrathful and vengeful parent or teacher.

4. Precocity. We are all familiar with infant prodigies. Nearly every family thinks it has one. Occasionally they grow up to be geniuses, but more often they grow up into ill-balanced, nervous, unhappy men and women. The child who is bookish, who is far in advance of other children of the same age should not be "shown off" but should be encouraged to enjoy wholesome play with other children and should have a great deal of outdoor life.

5. Backwardness. The child who is noticeably backward in school without any discoverable physical reason (as adenoids or defective vision) may have developed physically faster than he has mentally. Such a child needs to be dealt with very patiently. For him studies must be connected closely with interesting phases of every-day life, as, for example, physics and mathematics with the building of a toy dam or an express wagon.

6. Lack of sense of right and wrong. Sometimes the moral sense develops slowly in a child. Such a child may be led to take pleasure in obeying the rules of the game of life, if parents and teachers are quick to give their approval when he does right.

Sometimes children steal because the possession of property has not been allowed to develop normally. A child cannot respect the property rights of others until his own property rights have been respected. Every child should feel that certain things are his own, and cannot be taken away from him.

A child who is deformed or abnormal in any way often suffers more from his parents' attention than from his defect. They try to "make up" to the child for his misfortune, overwhelming him with loving kindness and never allowing him to forget that he is not like other children. He thus grows up with his attention turned in on himself, and totally unfitted for life.

Lucas says of handicapped children, "We can make timid parasites of them or self-reliant independent souls, who will make splendid contributions to life, in spite of these handicaps. Parents should never forget that the general mental atmosphere of the home has much to do with the mental

habits and mental health of children." Thom,* of the Massachusetts State Department of Mental Disease, comments as follows on this phase of the child's health:

"The ever-changing moods of the parents, colored by their indifference, their quarrels, depression, and resentments, and shown by their manner of speech and action, are decidedly unhealthy; so, too, are the timidity of a mother, the arrogance of a father, the self-consciousness of a younger sister, and the egotism of an older brother. Under such conditions we find a mental atmosphere as dangerous to the child as if it were contaminated by scarlet fever, diphtheria, or typhoid. On the other hand, cheerfulness, affection, kindly consideration, cleanliness, a manner and speech that are not forbidding but show interest in the questions of the child, frankness and honesty in answering questions with the idea of developing freedom in speech and action not inhibited by fear of punishment or silent contempt—all these things play a part in the development of the personality of the child that cannot be overestimated. The environment is found to be mirrored in the character of the child, regardless of what his heredity may be."

The most important "don't's" for parents who would have their children grow into well-balanced adults are these:

Don't frighten them.

Don't let them be constantly the center of attention.

Don't show them off.

Don't keep them up late.

Don't take young children to the movies except on special occasions.

Don't talk about them—their health and their peculiari-

*"A Mental Hygiene Primer," by Douglas A. Thom.

ties in their hearing, even though they seem too young to understand.

Don't ever be anything but frank and truthful with them if you want them to be frank and truthful.

The mental hygiene clinic or the child guidance clinic can help parents and teachers solve many of their problems. Such clinics are held under the direction of psychiatrists (specialists in mental and nerve disorders) in hospitals, in schools, and at child welfare centers free or for a small fee. The nervous child, the sad over-thoughtful child, the child with tantrums, the incurable bedwetter, the child who has night terrors, the child with bad sexual habits, the child who pilfers, the child who cannot keep up with his class—these are some of the children who need the kind of patient study by experts that these clinics offer. A persistent habit of sleep-walking may also require such attention.

MENTAL HEALTH

The author of the Book of Proverbs showed that he understood the effects of the mind on the body when he said—"A merry heart doeth good like a medicine but a broken spirit drieth the bones." A cheerful, courageous attitude toward life is an aid to physical health and indicates a condition of sound mental health. The person who worries constantly, who lacks courage to face life squarely and is easily discouraged is apt to be below par physically. This is easily understood when one stops to consider how close is the connection between mind and body. A sudden fright will set the heart to bounding as rapidly as if one were climbing a mountain. A disgusting sight will often "turn" one's stomach, as we say, and sometimes cause vomiting. Good news causes the eyes to sparkle and the cheeks to

grow pink, and makes one instinctively want to jump up and down or run. A person who is homesick often feels severe symptoms of physical illness which disappear when he goes home. Worry may cause serious indigestion through its effect on the blood supply and nerves of the stomach. A constant state of tension and worry may strain the heart.

Following are some of the commonest bad mental habits which, if they persist, may lead to more serious nerve disorders:

1. The habit of worrying.
2. The habit of dodging hard things.
3. The habit of being over-critical.
4. The habit of self-pity.
5. The habit of enjoying the morbid.
6. The habit of taking life too seriously.

Of course, these mental habits may be symptoms of underlying disturbances and stresses in the mental life, which have to be corrected before the worry, fear or self-pity can be eliminated. It is of greatest importance to find out *why* one worries and to do this the help of a mental specialist (psychiatrist) is sometimes necessary.

If every one who had reason to worry did worry, it would be a world of wrinkle-browed, careworn people. No one escapes trying problems and many of them. Some people simply meet them as they come. Others keep themselves in a tortured state of mind expecting future troubles and problems or wondering if they have dealt properly with past problems. Riggs * gives the following advice to chronic worriers:

"Consider first whether the problem in hand is actually your business. If it is not, turn to something that is. If

* "Just Nerves," by Austen Fox Riggs.

it is your business, decide next whether it be your business now. If it be your business and your business now, decide what is the wisest and most efficient thing to do about it. If you know, get busy and do it; if you do not know, if you lack knowledge, seek the knowledge you need and seek it now. Do these things, and in nine cases out of ten anxiety will not degenerate into worry. If the actual probabilities are so very bad that intense anxiety is unavoidable, nevertheless apply this mechanical rule, and then assert your faith and your courage; realize that success for you, as for others, is always an approximation of the ideal. Then rest your case on the determination that no matter how hard things may turn out to be, you will make the best of them—and more than that no man can do.”

It might be added that if this simple procedure fails, then it is probable that you are not only being made ill through worrying, but are also worrying because of unsuspected mental illness unconsciously underlying the obvious surface troubles. Probably only a good nerve specialist (psychiatrist) or mental hygienist can help get at the root of the matter in such cases.

Modern psychologists trace many aches and pains to the desire many of us have to run away from unpleasant things. Pratt * tells the story of a little girl who one morning was taken sick on her way to school. She went home, was put to bed and made much of. One morning not long afterward she was on the way to school when she suddenly remembered that she had an arithmetic examination that day and that she had not studied for it. She began to wish she might be taken sick again suddenly as she had been on that previous morning. On further thoughts of the arith-

* “Your Mind and You,” by George K. Pratt.

metic examination she decided she would pretend to be sick again and she did. Dr. Pratt goes on to describe this child as a grown woman, a nervous invalid dodging behind the plea of nerves or sick headache whenever anything unpleasant confronted her. Many another chronic invalid has been made in just this way. From earliest childhood one should be taught to face hard situations that it is necessary to meet.

A person who serves as a professional tea taster for a tea company is not likely to get very much joy out of afternoon tea. A music critic who listens critically night after night to symphonies may reach the point where he cannot enjoy music. In the same way a person who is in the habit of criticizing everything and everybody loses zest for enjoying life. Looking for the good in people instead of the bad is not merely good ethics. It is good medicine for a person who has contracted the criticizing habit. Persons who are superior to common things and common people, so-called "highbrows," are dangerously limiting their capacity for enjoying life.

A self-pitier, a person who feels that fate has given him a raw deal, is doomed sooner or later to ill health. His mind is so turned in on himself that his body cannot function properly. An excellent pastime for a person who pities himself is to go out and find a few people who are worse off and do what he can to help them. He will soon realize that misfortune has not singled him out for abuse. He should also read a few good biographies of men and women who have achieved and consider what handicaps and obstacles to attainment have been the lot of successful people.

Some people enjoy all the morbid things of life. They get the keenest zest out of reciting symptoms or describing

an operation or going to a funeral. Their everyday conversation is as morbid as a morgue report. One meets these people at every turn. They are usually those who are not living very active lives, who have time to sit around on hotel piazzas. Morbid talk does harm in two ways. It is likely to affect the health of the talker and also of the listener. Children are especially likely to be harmed by morbid talk. Serious nervous troubles and imagined illnesses have again and again been traced back to an "old wives' tale" that fell on the fertile soil of an impressionable child's mind.

The person who takes life too seriously is heading for a breakdown, for play is an essential in every one's life.

Of course, in addition to external circumstances, there are intimate, personal mental states that help to determine one's attitude toward life. Unconscious desires, fears and motives, founded on forgotten past experiences to a large degree determine conduct. These mental states rather than a fancied or real disturbance in the environment may be the real cause for worry, self-pity, timidity and other bad mental habits. Sometimes one can find the underlying cause one's self; sometimes the professional help of a mental hygienist or psychiatrist is needed. In all circumstances it is important to know the facts and face them.

Mental hygiene clinics and child guidance clinics are being opened in a large number of cities. They are reaching illnesses upon which ordinary medicine and surgery can make no impression, illnesses which have their roots in faulty mental habits, illnesses which are bound up with the patient's personal difficulties. The cure lies in helping the patient to adjust himself to life. These clinics are under

trained psychiatrists. Treatment is given either free or for a small fee.

MENTAL SUGGESTION

Mental suggestion is not a new fad. It is world old. It has been practiced in India for centuries, and the author of the Book of Proverbs recognized its power when he said, "As he thinketh in his heart so is he."

We have all seen instances of the power of suggestion in its effect on mind and body. There is the oft-told story of the man who woke up in the night feeling somewhat suffocated for want of air. He struggled to open a window but made no impression upon it. In desperation he smashed a pane of glass. How good the fresh air felt! He took long breaths of it and then went back to bed and slept soundly until morning. When he awoke he discovered he had broken a pane of glass out of the bookcase. Many people can awake promptly in the morning by suggesting to themselves, the night before, that they are going to awake at a certain time. One even hears of people who have been able to solve intricate problems which had vexed them through the day by suggesting to themselves on going to sleep that they will be able to solve them. During sleep the mind is said to be working on the problems. In the morning the solution apparently comes all at once.

Mental suggestion is based on the principle that every idea which enters the conscious mind, if it is accepted by the unconscious part of the mind, forms a permanent element in one's life. Thus a person can definitely influence his thinking and his conduct by inducing his unconscious mind to accept certain ideas as a basis for action. To influence thought and action in this way it is proposed that

one choose a time when the conscious mind is least active, so that there will be no conflict between the ideas entertained by the alert part of the mind and the ideas implanted in the passive part of the mind. When one is asleep the unconscious mind is in control. Just before going to sleep and just on awaking the conscious mind is still very inactive. Hence, according to this theory, at these times it is easiest to use suggestion effectively.

Monsieur Emile Coué of Nancy, France, was said to have performed apparently remarkable cures by the simple method of getting his patients to repeat to themselves every night and every morning the formula, "Day by day in every way I am getting better and better." When M. Coué visited this country in 1923 he was hailed almost as a miracle worker. Many people, failing to comprehend fully M. Coué's methods of cure, grasped at his formula as if it had a magic influence in itself. There is of course no magic formula that has power to cure. However, many functional nervous states have been influenced by suggestion.

Cures attributed to Christian Science, Faith Healing and New Thought have presumably been brought about, in part at least, by suggestion. The physician's pills are sometimes helped in their work by the suggestion the doctor gives that his medicine will effect a cure. Many nerve specialists aim to influence their patients by suggesting thoughts of health for thoughts of illness and thoughts of hope for thoughts of anxiety. A well-informed mother can sometimes correct bad mental habits on the part of her child by suggestion, although it is always important to find out the underlying cause for such habits, just as she would if the child had a physical illness. Naturally the help of the physician will often be necessary.

MERCURY POISONING

Hamilton * tells how in 1810 the British ship *Triumph* had some mercury containers broken in its hold. As a result all the birds and cattle on board the ship died, two hundred sailors had symptoms of mercury poisoning and three of them died, merely from breathing in the fumes from the spilled mercury.

In certain industries there is constant danger of the workers absorbing the fumes of mercury in small quantities. Industries in which poisoning is especially common are the mining of quicksilver, the separation of gold and silver from their ores, thermometer making, the making of felt hats and fur dressing. A disease exceedingly common among hatmakers and referred to by them as "hatters' shakes" is a chronic mercury poisoning. The New York and New Jersey section of the National Civic Federation in three months' time found 60 cases of mercurial poisoning among the hatmakers of Brooklyn, Newark and Orange.

Signs of chronic and subacute poisoning are sleeplessness, nervous irritability, swelling and soreness of the gums and trembling of the muscles. Digestive disturbances, such as loss of appetite and diarrhea, are not uncommon symptoms.

Like lead poisoning, mercury poisoning may be prevented by proper precautions on the part of workers and employers. The use of adequate systems of ventilation and devices to carry away the mercury fumes should be enforced in all industries where there is danger of this poisoning. Workers should wear rubber gloves and should practice scrupulous cleanliness, changing clothes and washing the hands always before eating.

* "Industrial Poisoning in the United States," by Alice Hamilton.

MILK

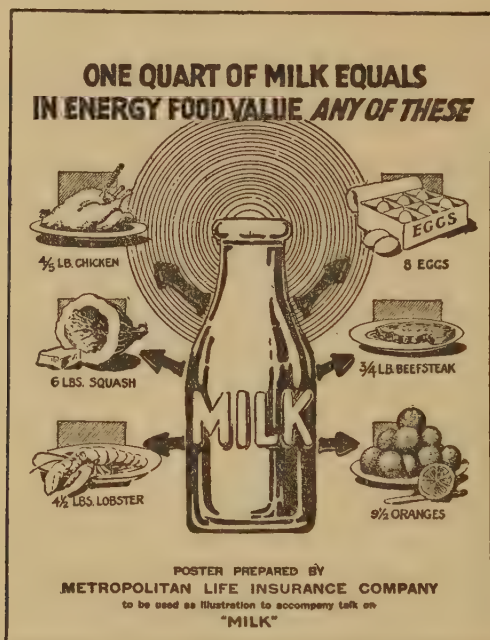
If any one food should be called the "staff of life," it is milk. Combined in milk are practically all the food qualities the body needs (except one of the vitamins and the bulky substances that help to keep the intestines functioning). Even at present prices milk is a cheap food, since it ranks so high in nourishing qualities and since there is no waste in milk. The economy of buying milk is brought home to us when we realize that a glass of milk has as much food value as two large eggs or one large serving of beefsteak or chicken. Milk is the best source of lime (calcium), necessary to make strong bones and sound teeth.

Children must have milk, if they are to have normal growth. It is a guarantee for building strong bones and making firm flesh and red blood. Every member of the family needs at least a pint a day. A quart is not too much for children.

Though pure milk is the most valuable of foods, impure milk may be the most dangerous. Again and again epidemics of diphtheria, typhoid fever and scarlet fever have been traced directly to an infected milk supply. A frequent source of tuberculosis is milk. Milk may be infected and thus be a carrier of the bovine *tubercle bacillus* and of the germs of diarrhea and dysentery.

Fortunately milk can be made perfectly safe by the simple process of pasteurizing it and sealing it in sterilized bottles. Milk is pasteurized by simply heating it to 145° Fahrenheit, keeping it at this temperature for thirty minutes. It should then be promptly chilled and kept cold. The heat kills disease germs that may be carried by the

milk and thus renders it absolutely safe. Many of our larger cities require that all milk sold within the city limits be pasteurized, unless it is from cows that have been tested and declared free from tuberculosis. New York City re-



quires that all milk be pasteurized, unless it is certified. The pasteurization label is the consumers' guarantee of safety.

The freshest and cleanest milk for babies and invalids is certified milk. The milk is certified by a medical milk commission, under whose supervision it is produced. In order to receive the label "certified" milk must be from cows that

have been tested by a veterinarian for tuberculosis and are examined by him at regular intervals. A bacteriologist and chemist analyze the milk; and a physician looks after the health of the milkers to be sure that they are free from the germs of any contagious diseases. The cows are curried, groomed, and kept as clean as race horses; sterilizers are provided for bottles and pails, skilled foremen are in attendance to see that the milkers wash their hands and wear clean clothes; the milk must be bottled and iced at the dairy and the construction, lighting and ventilation of the cowbarns must be extra good and the water supply extra safe.

The person who uses raw milk is taking a big risk. He is also taking a big risk when he buys "loose milk," as it is called; that is, milk which is dipped from a can instead of being sold in bottles. Milk may become contaminated after pasteurization and therefore should be kept cold, clean and covered and handled in tightly sealed bottles.

One is apt to think of the country as the place to go for good milk. We speak of "clean, rich, country milk." Country milk is often richer than city milk, but is less safe than the same milk pasteurized in the city dairy. Many a vacation in the country or at the seashore has been turned into a fight with sickness because the milk was not the "clean country milk" it was thought to be. When raw milk is used, there are four questions to be asked about it. First, is it from cows free from disease? Second, is it from clean cows and clean stables? Third, is it milked by men who are clean and free from disease? Fourth, are the milk pails and milk containers sterilized? Some state boards of health require careful inspection of all the dairies in the state. Where there are no such regulations, a clean, safe milk sup-

ply in the country depends on the intelligence and conscience of the individual farmer, and farmers, like other people, cannot always be depended on to be intelligent or careful.

When one is unable to procure a safe pasteurized milk, and is in doubt about the milk supply, the best thing to do is to pasteurize milk at home before using it. The easiest way to pasteurize milk for family use is to heat it in a double boiler for three-quarters of an hour and then to chill it quickly.

The best and simplest home method of pasteurizing milk for infant feeding is in a pasteurizer. Milk of good quality is placed in individual nursing bottles and heated according to directions given below.

A pasteurizer can be purchased consisting of a pail of water and a receptacle for the bottles of milk. It is used as follows:

After the bottles have been thoroughly cleaned, they are placed in the tray and filled with the milk or mixture used for one feeding. Then put on the corks or patented stoppers without fastening them tightly.

The pot is now placed on the wooden surface of the table or floor and filled to the supports with boiling water.

Place the tray with filled bottles into the pot so that the bottom of the tray rests on the supports, and put cover on quickly.

After the bottles have been warmed up by the steam for five minutes, remove the cover quickly, turn the tray so that it drops into the water; replace the cover immediately. This manipulation is to be made as rapidly as possible to avoid loss of heat. Thus it remains for twenty-five minutes.

Now take the tray out of the water and fasten the corks or stoppers airtight. Cool the bottles with cold water and ice as quickly as possible, and keep them at this low temperature until cold.

Use the milk from the bottles and do not pour it into another vessel.

The milk should not be used for children later than twenty-four hours after pasteurization.

Emphasis is laid on the fact that only fresh, clean milk, which has been kept cold, should be used.

There are many precautions that are important after the milk has been delivered to the home. It should not be allowed to stand outdoors but should be put in the refrigerator as soon as delivered. Before the paper stopper has been removed, the top of the bottle should be washed. After milk has been poured from the bottle, it should be re-covered with an inverted tumbler. If the milk is emptied from the bottle it should still be kept covered, as it is readily tainted and absorbs odors and flavors.

The care of milk bottles is highly important, and the housewife as well as the dairyman should feel a responsibility about this. The bottles should be thoroughly washed and scalded after they are emptied. They should never be used for any other purpose and should on no condition be taken into the sickroom.

MINERAL OIL

(See *Constipation*.)

MINERAL SPRINGS

(See *Bathing*.)

MINERAL WATERS

(See *Water.*)

MINERALS

(See *Diet.*)

MINER'S LUNG

(See *Working Conditions Injurious to Health.*)

MORPHINE

(See *Narcotic Drugs.*)

MOSQUITOES

(See *Malaria and Yellow Fever.*)

MOUTH BREATHING

(See *Adenoids.*)

MUMPS

Mumps is a painful swelling of the parotid gland which lies in front of and under the ear. The swelling may occur on both sides of the face at once, or may appear on one side and then in a few days be followed by swelling on the other side. Mumps may start with high fever. Contagiousness begins even before the swelling and may continue a week or more after its disappearance. As a rule the disease is mild, but there is sometimes danger of unpleasant complications occurring. The patient should be isolated and a physician should always be consulted. Little treatment is required in ordinary cases, though rest in bed is most important. Warm camphorated oil may be applied locally if needed. It is important that the patient's bowels be kept

open. He should have a liquid diet and be given a daily bath.

MUSTARD FOOT BATH

(See *Home Nursing*.)

MUSTARD PASTE

(See *Home Nursing*.)

MYOCARDITIS

(See *Heart*.)

NARCOTIC DRUGS

There are certain drugs, called narcotics, which dull the senses and soothe pain, but poison the body and cause a craving for repeated doses. The commonest forms of these harmful drugs are cocaine and the products of opium known as morphine, codein, heroin and dionin. A person can become a so-called "dope fiend" almost without realizing that he is forming a habit. According to certain authorities, any one repeatedly taking a narcotic drug for thirty days is in grave danger of becoming a slave to it. Often the habit is begun by using the drug to relieve acute pain. The dose is repeated every time the pain is felt. Suddenly the poor victim realizes that he cannot go without the drug any length of time without suffering a torturing craving for it and feeling weak and miserable. Carelessness in prescribing opiates on the part of incompetent or unscrupulous doctors is thought to be responsible for a certain percentage of the use of narcotic drugs in this country. In the hands of a reliable physician, opiates are valuable in the treatment of certain acute disorders, but they should never be taken except by the advice of such a physician.

Profits to be derived from these drugs have caused a well-organized traffic in narcotics. Business is often prosecuted by criminals, degenerates and habitués of resorts of ill repute, who lure others to try the harmless-looking white powder they offer and "see how good it makes them feel." The temporary feeling of stimulation and renewed "pep" is distinctly pleasant. The beginner tries another dose and another. Thus the habit is begun.

In addition to the enslaving craving for the drug, the victim suffers unpleasant physical and mental after-effects, indigestion, constipation, insomnia, irritability, sleeplessness, loss of will power.

The drug habit, even when well established, can be cured. But cure involves long, skillful treatment. The use of the drug must usually be removed gradually. Often a strict regimen must be followed in regard to diet, sleep and exercise. Old companionships and temptations should be removed until sufficient will power can be built up to withstand temptation. Often the help of a good psychiatrist is needed, since drug addiction is not infrequently a form of mental disease. Cure should be undertaken only under the direction of a physician or institution of repute, since there are many quacks who pretend to cure drug addiction.

The number of drug addicts in this country has been variously estimated from 80,000 to 4,000,000. One million was thought to be a conservative estimate by Rosenau in 1921.

The use of narcotic drugs is a medical and public health problem of not only national but international proportions. In 1914 a Federal Act, known as the Harrison Narcotic Act, was passed requiring physicians and retail druggists to keep record of all narcotic drugs handled, and requiring wholesalers to render to the Bureau of Internal Revenue

full reports of purchases and sales of drugs and forbidding other persons from selling narcotic drugs or giving them away. The Jones-Miller Bill, passed in 1922, prohibits the importation into the United States of any narcotic except crude opium and coca leaves and only such amounts as the Narcotic Division of the Federal Government decides is "necessary to provide for medical and legitimate uses only."

In spite of the vigilance of the government, narcotic drugs are still smuggled into the country. An effort to check the supply at its source in the opium-producing countries was made in 1923. At a conference called by the opium commission of the League of Nations in 1923 the United States proposed a resolution that "the only legitimate use of opium is for medicinal and scientific purposes and that no more should be produced than is needed for those purposes, the extent of that need to be clearly defined." This proposal, though accepted in principle, was practically nullified by reservations.

Measures recommended for the control of drug addiction are:

More sanatoria.

Special provision to supply narcotic drugs to those with incurable diseases whose condition makes necessary the use of drugs.

More hospitals for the mentally diseased.

A movement among physicians to limit the use of narcotic drugs in the treatment of painful diseases.

Stricter state and local law enforcement.

Education of the public as to the dangers of continued use of drugs to relieve pain.

NEPHRITIS

(See *Bright's Disease*.)

NERVOUSNESS (Neurasthenia)

Nervousness is caused by a lack of adjustment to the world as it is: cure consists in some sort of readjustment between the person and the demands of the world.

Nervousness takes so many forms that people are often tricked into thinking that there is something wrong with their physical equipment when in reality the trouble is with the nervous system or mental life. That does not mean, however, that the ailment is imaginary, for mental health and physical health are bound closely together, and a person may experience very real suffering from misbehavior on the part of his nerves. Severe attacks of indigestion and aches and pains in nearly every part of the body may be due to nerve disorders. Exhaustion more devastating than could be brought about by the heaviest manual labor and even paralysis and blindness have been traced to this source.

Nervousness and nervous ills do not indicate that the nerves are diseased or even exhausted, as they are sometimes said to be. It merely means that they have "slipped a cog" and need to be readjusted in order to go on carrying their load.

We often hear people say that so and so "has brain fag" or "tired nerves" or that such and such a college professor is having to take a long rest for his nerves. According to modern students of mental health there is no such thing as brain fag or nerve exhaustion. Nerves do not need rest;

they need only to be taught to work right. Scientists tell us that most of us scarcely tap the mental and physical energies of our bodies. The reason why our nerves sometimes seem to be exhausted is that they are not working harmoniously. Nerves that have been trained to go at a steady gait can do an enormous amount of work without getting tired.

"Fatigue is a safety-device of nature to keep us within safe limits, but it is a device toward which we must not become too sensitive. As a rule it makes us stop long before the danger point is reached. If we fall into the habit of watching its first signals, they may easily become so insistent that they monopolize attention. . . . In any work it is the feeling of strain which tells, the emotionalism and feeling sorry for oneself because one has a hard job. It is wonderful what a sense of power comes from the simple idea that we are equal to our tasks." *

A large number of nervous illnesses, especially those that are often wrongly called "nervous exhaustion," are thus due to over sensitiveness to impressions and too great concern over oneself. Most of us have had the experience of feeling sick and then having our symptoms disappear when we became interested in a game or a play or something equally engrossing. The over-sensitive, self-absorbed person can never forget his own feelings.

An interesting thing about the body is that it does not like to be watched. If one is constantly afraid that such and such symptoms will result from such and such a course of action, he is pretty sure to feel the symptoms.

* "Outwitting Our Nerves," by Josephine A. Jackson and Helen M. Salisbury.

The body is also very ready to respond to suggestion. Serious nervous illnesses have been caused in perfectly healthy bodies in this way. Parents who tell a child that he is delicate, who are always saying "you are not strong enough" to do this thing or that often make a nervous invalid out of a person who would have been perfectly healthy.

All this does not mean that one should disregard one's feelings. But it does mean that one should not give in too easily to fatigue and to aches and pains.

Pains are frequently the result of habits. Something has been wrong in the past with the body. The nerves go on acting as though the trouble still existed.

Over-sensitive people often get "all keyed up" over any exciting event. Such people use up enough energy in a few minutes to last them a week. The tension started in this way may result in what seems like exhaustion from overwork. It may interfere with the circulation and cause headaches, it may cause the stomach to behave queerly.

"Much nervousness is but the outward expression of a mental conflict," says Pratt.* A mental conflict is caused in different ways. Frequently it is due to a clash between the fundamental instincts and circumstances of modern life which prevent these instincts from having free expression.

During the World War what was thought for a time to be a new disease known as "shell shock" attacked men in large numbers at the fighting front. Some were paralyzed, some were delirious, some were afflicted with strange jerkings and twitchings of muscles. At first these disorders were thought to be literally the result of shock to the body from the noise of high explosives. As time went on and the number of these cases increased specialists in nerve disorders began

* "Your Mind and You," by George K. Pratt.

to study them. It was found that in most cases "shell shock" was a breakdown due to a conflict between the natural instinct of self-preservation and the sense of duty and loyalty. In the same way breakdowns in civil life are often caused by conflicts between the instincts and the demands of modern life. A not uncommon illustration of this type of conflict is the daughter who instinctively seeks love and marriage but at the same time feels that duty binds her to an invalid parent.

Again and again mental conflicts have been found to be due to fears or other faulty mental habits which had their beginning in childhood.

The cure of any serious and persistent nerve disorder should be placed in the hands of a nerve specialist of repute or a mental health clinic. One should no more neglect having expert advice for a nervous ailment than for a physical ailment.

The prevention of nerve disorders is easier than the cure, provided one is fortunate enough to have wise parents, for nearly all such troubles have their beginnings in childhood. The nervous, over-timid child, the child who has tantrums, the child who is over-sensitive, the child who is self-centered needs wise guidance and, often, the attention of a specialist in nerve disorders or a mental hygiene clinic. (See *Mental Habits of Children*.)

For a grown person prevention is a matter of cultivating healthy mental habits, of finding absorbing interests outside himself and of keeping work, play, rest and exercise in their proper proportions. (See *Mental Health, Exercise, Recreation*.)

Perhaps the best advice that can be given to the nervous

and easily exhausted is contained in "Outwitting Our Nerves":

"Get understanding! Get courage! Get busy!"

NEURALGIA

Neuralgia is characterized by a severe pain following the course of some nerve and its branches. It is commonly a symptom of some other ailment, rather than a distinct disease in itself. It is perhaps most frequently caused by infected teeth or by eyestrain. It may also be due to intestinal poisoning, to lead poisoning, to malaria or diabetes. Sometimes neuralgia is an indication of nerve disorder and sometimes the cause cannot be located. In some cases rest, nourishing food and a change of scene are the only treatment necessary. A physician should always be consulted for persistent attacks of neuralgia. (See *Focal Infections*.)

NEURASTHENIA

(See *Nervousness*.)

NEURITIS

Neuritis is an inflammation of a certain nerve or group of nerves. Pain, a steady dull ache or in stabbing darts, is the chief symptom. Often there is a tingling sensation or numbness in the part affected.

Neuritis is frequently a symptom of diseased teeth or some other focal infection which inflames a nerve or group of nerves. A great many cases of neuritis have been cured by treatment of root abscesses of the teeth. Certain occupations that place a strain upon a set of muscles, for example, constant writing or violin playing, may be causative factors. Sometimes neuritis follows an injury, such as a

broken arm. Sometimes it is caused by the poisons of infectious diseases, sometimes by the use of alcoholic drinks, and again it is brought on by exposure to cold or over-exertion. An especially painful form of neuritis is inflammation of the sciatic nerve, sometimes called "sciatica" and "sciatic rheumatism." Rest and hot applications often afford relief. The patient, however, should not rely on alleviatory measures but should have an examination by a physician to make certain of the diagnosis and to find out the underlying cause of the inflamed nerves.

NIGHT AIR

(See *Ventilation*.)

NOISE, Effects of on Health

(See *Sleep*.)

NOSEBLEED

This may be due to a slight injury or may come on without an injury, especially in children. Slight nosebleed does no harm and does not require treatment. It may prove difficult to stop severe bleeding, though this is not usually the case. Put the patient in a chair with head hanging back. Loosen collar and apply cold applications to the back of the neck. This can be done by means of a cloth wrung out in cold water. A roll of paper between the gum and the upper lip will help, as will pinching the soft part of the nose. If bleeding continues, a physician should be called at once. While waiting, make a cotton plug and push it with the end of a pencil into the nostril from which the blood is coming.

NURSES, PUBLIC HEALTH

The public health nurse is one of the greatest servants of preventive medicine. She has been rightly named a "messenger of health." She goes into homes, into schools, into industrial plants. "The visiting nurse is the most important figure in the modern movement for the protection of the public health," says Winslow.

The work of a visiting nurse may be summed up as follows:

1. She gives skilled nursing care to the sick.
2. She teaches a member of the family how to give this care so that the patient will have good care during her absence.
3. She instructs the family in health habits and emphasizes the importance of home and community hygiene.
4. She not only explains how to prevent the spread of communicable diseases but tries to arouse in each person with whom she comes in contact a desire to prevent the spread of disease.

A visiting nurse service enables people to have the bedside care of a trained nurse at reasonable hourly rates. In this way those who could not afford the services of a private nurse can receive expert attention.

Take for example the mother who is ill and not able to have a nurse. The visiting nurse comes in, gives her a bed bath, makes her bed, changes the linens, combs her hair and gives treatments and medicines ordered by the doctor. The person in the home who is caring for the sick mother is instructed how and when to give the medicines, treatments, and nourishment and is provided with an outline

to enable her to do these things in order and on time. Some public health nurses specialize in certain definite fields, for example, the nurses employed by tuberculosis committees and child welfare associations.

The services of public health nurses are no longer confined to cities and towns. The startling revelation of physical defects among country boys discovered through the war draft examinations hastened the development of public health nursing in rural sections. Some state and county departments of health maintain nurses. County Red Cross Chapters and County Tuberculosis Committees are doing a widespread work. In mud-spattered Fords and on horseback, these visiting nurses penetrate to isolated communities, to lumber camps and to mountain homes with their message of health. Health crusades conducted in the schools are an especially fundamental part of their work.

The school nurse has an important work to do in preventing illness, and in doing constructive health work among school children. (See *The School Nurse*.)

The industrial nurse is the result of a realization on the part of business men that there is an enormous amount of wasted energy and inefficiency in industry due to preventable illness, neglect of accidental injuries and fatigue. (See *Health Service in Industry*.)

OCCUPATIONAL THERAPY

Occupational therapy has been defined as "any mental or physical activity definitely prescribed and guided for the specific purpose of contributing to and hastening recovery from the effects of disease or injury." Occupational therapy or curative work is being employed to-day in increasing measure in all forms of sickness and injury; alike in hos-

pitals and institutions and in homes of temporarily or permanently disabled adults and children. In the field of mental work, in particular, where it has for long had a place, very great developments in its use have taken place in recent years. In that field, with its many and increasing ramifications in the problems of the delinquent and the subnormal, carefully planned and definitely guided occupations are being used more and more with beneficial effects. In large state hospitals the introduction of occupational therapy has wrought great benefits, especially for the women patients who are not able to participate in agricultural work, which has proved so beneficial as a curative occupation for men. Work already done in many centers has shown another important field for curative work to crippled children, including the large numbers of infantile paralysis cases all over the country.

In orthopedic hospitals exercises in the curative workshops are fast displacing the older forms of uninteresting mechanical exercise with elaborate and costly apparatus.

Increasing use of curative occupation is also being made in tuberculosis hospitals and sanatoria, alike for its therapeutic value, which is chiefly in the relief it affords from the intolerable ennui so often experienced during the weary months necessary to effect a cure of this disease, and for its usefulness as pre-vocational training for a gainful occupation after the patient leaves the institution.

A leading American psychiatrist of international reputation has said "Occupational therapy will some day rank with anesthetics in taking the suffering out of sickness and with antitoxins in shortening its duration. The greater part of the distress in chronic diseases is mental, and occupational

therapy is, thus far, our only means of dealing with this factor."

Occupational therapy can be, and is being, applied in various types of hospitals and in all stages of illness, and can roughly be divided into three stages of its remedial application.

1. Diversional therapy, in which simple amusements, such as games and puzzles, are used to occupy the fingers and divert the mind.

2. Occupational or handicraft therapy, in which definite tasks are assigned, involving the doing of useful things with wood, beads, textiles, clay, metal, etc., for the purpose not only of occupying the mind, but of assisting in the restoration of lost or weakened function.

3. Pre-vocational training, in which the prescribed remedial agents are employed for the distinct and studied purpose of leading up to definite education and training for some industry, trade or profession.

Many beautiful articles are produced in the occupational therapy work in hospitals and by "home-bound" persons, and in many instances patients are able to earn money by the sale of their products.

OPEN-AIR SCHOOLS

Open-air schools have proved a valuable means of preventing tuberculosis and of building up the under-nourished child. Children are admitted only after a thorough medical examination. In most of these schools the child's temperature and pulse are usually recorded daily and the children are weighed at stated intervals. Special lunches and special rest periods are provided. The classrooms are open to the outdoors all the year, windows and screens being used

mainly to prevent the entrance of wind and storm. Sometimes the open-air school is held on the roof or on a porch. Sometimes, where a special place is not provided, a room is set aside as an open-air room and all the windows are kept wide open winter and summer. The children wear special clothing to keep them warm. In Chicago they are furnished with lumbermen's boots and sweaters or Eskimo suits.

The benefits derived by children attending these schools are marked. Comparisons made at the Horace Mann School, New York City, between children in indoor classes and children in outdoor classes showed that 12.5 per cent. of the outdoor children had contagious disease compared with 17.9 per cent. of indoor children. In their studies also, the outdoor pupils were ahead of their schoolmates in indoor classes. An open-air school in Bradford, England, reported in one year an average gain in weight per child of four and one-half pounds, an average increase in hemoglobin (the red coloring matter in the blood) of 21.5 per cent. and an average increase in chest measurements of 1.12 inches.

Open-air schools are so definitely filling a need that many cities have decided to incorporate fresh-air rooms in all their new buildings.

OPIUM

(See *Narcotic Drugs*.)

OSTEOMYELITIS, ACUTE

Acute osteomyelitis is a rapidly developing and formidable disease which takes an annual toll of lives, especially among children. This disease is an acute infection of a bone (sometimes several bones). It often develops soon

after a fall or a slight injury which appears to produce a spot of lowered resistance, where bacteria that happen to be in the system rapidly multiply. The child complains of pain and objects to moving the part affected, crying when it is handled. Soon there develops a fever, swelling and redness. This swelling is often near the joint and is often mistaken for rheumatism. It is not rheumatism, nor is it "growing pains." There is no such thing as a "growing pain." The condition is a threatening one, as pus forms in the bone. It would be far less serious if parents were on the watch for it. Osteomyelitis must be promptly recognized and promptly operated upon or else the patient will soon be fatally overwhelmed with the poisoning produced by the disease. A day—even a few hours—may hold the balance between life and death.

OSTEOPATHY

The method of treating disease known as osteopathy was founded in 1874 by a physician named A. T. Still. One of the theories of this treatment is that within the body are all elements necessary to health and that if circulation is kept in perfect condition, these elements will be distributed properly through all parts of the body and health will result. Many osteopaths maintain that bodily health is thrown out of gear by misplacements of the bones, muscles and ligaments of the spine. The cure consists in manipulation of the spine to restore normal adjustments and thus relieve the congestion which these misadjustments have caused. However, osteopaths are apparently unable entirely to agree among themselves as to a uniform theory of

disease causation, and other variations in the theory are stressed by some.

At present the medical profession regards the osteopathic form of treatment as being useful in relieving certain symptoms. It does not feel, however, that the theory on which this treatment is based has been fully established.

A commission appointed in 1922 by a committee of the Massachusetts Medical Society recently completed a study of the value of osteopathy and the soundness of the theory on which it is based. The results of this study seemed to indicate that the principal osteopathic theories failed to stand the test of careful experiment. Frothingham * says: "The present knowledge in regard to osteopathy seems to warrant its being considered of value in the treatment of a limited number of abnormal conditions but it does not warrant looking upon this profession as being a worthy substitute for the established facts in general medical science."

It seems quite clear that if osteopathic methods are to be employed, they ought to be used by a practitioner with a knowledge of medicine equal to that of a licensed physician who has been graduated from a reputable medical school and is competent to make a diagnosis of the cause of the disease for which osteopathic treatment is to be applied.

OUTDOOR SLEEPING

(See *Sleep, Pneumonia and Tuberculosis.*)

OVERWEIGHT

(See *Diet.*)

* "Osteopathy, Chiropractic and the Medical Profession," by Channing Frothingham, *Atlantic Monthly*, July, 1922.

PAIN

Pain is a warning that some part of the body is in distress or danger. To deaden pain with drugs is merely to lull into a state of quiet the sense organs reporting the pain. The disturbance goes on. Sometimes the feeling of pain indicates accurately the part of the body affected. Equally often it does not: For example, pain in the head may be a symptom of any one of a large number of disorders varying from eyestrain to measles or influenza. Pain in the back may be caused by a fallen arch or an infected tooth. Pain in the knee may be due to infected teeth or infected tonsils or some other infection as well as a condition directly affecting the knee itself. The first thing to find out about a given ache or pain is where and what is the cause, and to do this frequently requires the expert attention of the physician or the dentist.

PASTEURIZATION OF MILK

(See *Milk*.)

"PATENT" MEDICINES AND ADVERTISED CURES

Patent medicines, as generally understood, are mixtures of drugs, to which a special name has been given, the latter usually being protected by a trade mark. Some of these give the formula on the label. Others are presumably secret preparations, so that the user does not know the composition of the preparation he is purchasing. Patent medicines, or proprietary remedies, as they are frequently called, may be classified into three groups:

1. Legitimate, honestly labeled remedies, containing drugs that are of value and which will probably be helpful, if administered in disorders for which they have been found useful. In many cases, the determination of the nature and cause of such disorders requires diagnosis by a physician.

2. Preparations which may have curative value and are not harmful, but which do not give the ingredients on the label. They frequently contain inexpensive and well-known drugs which, if purchased separately, could be bought cheaper.

3. Actual frauds. Preparations that are worthless or contain habit-forming or poisonous drugs, sold under claims that are false or fraudulent.

The most widely advertised of the last named group are:
Headache powders or tablets.

Constipation cures.

Tonics—especially alcoholic and iron tonics.

Kidney trouble cures.

Remedies for disorders of the female generative organs.

Tuberculosis "cures."

Cancer "cures."

Epilepsy "cures," etc.

Most headache remedies contain drugs, such as acetanilid or acetphenetidin, that may depress the heart, disorganize the blood and produce a habit. Only a physician can tell whether a person needs or can tolerate the use of such drugs.

Constipation remedies, even when harmless in themselves, nevertheless may be injurious, especially when continuously depended upon, because they tend to weaken the power of the bowels to act naturally. Constipation that does

not yield to the forming of regular habits, a corrective diet and exercises should receive the attention of a physician.

The alcoholic "tonics" are insidious to a degree. Not only do they produce the harmful effects of alcohol on the various organs, but by their narcotizing action they mask real trouble and lead the patient to imagine he is being benefited. A person cannot tell for himself whether he needs a blood tonic. Only by a chemical and microscopic examination of the blood can a doctor be sure that the blood is below par. Furthermore, remedies advertised as containing iron and other substances may contain a very small quantity of the supposedly needed minerals. An analysis of a widely-advertised patent iron tonic showed that in a single tablet there was only $\frac{1}{25}$ of a grain of iron. If a person wants to take iron on his own responsibility, which cannot be recommended, it is possible to get iron in tablet form for about $\frac{1}{25}$ of the cost of the proprietary article.

Some widely-advertised cures for kidney trouble contain substances that may be seriously irritating to inflamed kidneys. An unfailing symptom of diseased kidneys, according to advertisements, is backache. As a matter of fact, backache is not a symptom of kidney disease but is much more likely to indicate some other disorder. When the cause of a backache may be fallen arches, to dose with kidney pills is worse than useless.

Disorders of the female generative organs are usually due to a misplacement, a chronic inflammation, cancer, tumor or venereal disease. It stands to reason that a bottle of medicine can do little in any of these cases.

The rational and scientific treatment of diseases like tuberculosis and epilepsy is largely a matter of revising one's manner of living. Medicines are of little value. For

cancer, the only known remedy is surgery in the early stages.

Great harm may be done by deceptively advertised medicines by appealing to fear. Advertisements of certain cures frequently scare people into thinking that they have diseases they have not.

In addition to deceptively advertised medicines, there are quack doctors who travel about from town to town selling cures, and quacks who work through the mails, as well as irregular and poorly-trained practitioners of all sorts. Thanks to the activities of the United States postal authorities, it has become increasingly difficult to practice fraud through the mails, but a certain amount still slips through.

The Federal Food and Drugs Act has helped to curb the fraudulent medicine business by requiring that labels state the presence and amount of alcohol, morphine, opium, cocaine, heroin, eucain, chloroform, cannabis indica, chloral hydrate, acetanilid and their derivatives and by prohibiting false statements of curative powers on or in the trade package. This law is effective, however, only in controlling the claims stated on or in the package. Fraudulent claims can still be made in newspapers, magazines, billboards, circulars, etc. Furthermore, a product manufactured and sold in the same state does not come under this ruling.

Information concerning most of the advertised patented remedies may be secured by consulting a two-volume book published by the American Medical Association, 535 North Dearborn street, Chicago, Illinois, entitled "Nostrums and Quackery." From the same source a number of interesting pamphlets can be obtained dealing with such subjects as "Cancer Cures," "Consumption Cures," "Epilepsy Cures," "Deafness Cures," "Obesity Cures," etc.

In addition to proprietary remedies, there are numerous "cures," extensively advertised—nature cures and cures called by various grand-sounding names often ending in "therapy" or "pathy." There are, too, fake health magazines that dispense advice on every subject pertaining to health, advice which is not based on sound, scientific investigation and that reflects ignorance and prejudice or is written for the purpose of making sales for the magazine.

The only way to protect oneself from unsound health advice and harmful or worthless remedies is to make it a rule not to try cures without consulting a well-qualified physician.

Fisher and Fisk * give the following as a few of the signs by which the well-qualified physician may be identified:

"(1) Membership in the local medical society.†

"(2) Membership in important medical societies that have special standards for admission. This applies more particularly to specialists. For example, a surgeon who is a fellow of the American College of Surgeons has been compelled to submit satisfactory proof that he has had a certain amount of experience in important surgical work, as well as other qualifications. There are good surgeons who are not members of these societies, but this is merely one of the signs by which a good surgeon may be identified.

"(3) College of graduation and hospital service. Physicians who have graduated from a first-class college and have served in important hospitals in association with the leaders in medicine would, on the average, rank higher than those

* "How to Live," by Irving Fisher and E. L. Fisk.

† This carries with it membership in the State Medical Society and the American Medical Association.

with less fortunate experience. There are, of course, exceptions to such rules.

“(4) Physicians who have important hospital relationships and teaching positions.

“These rules, of course, apply more particularly to the larger communities. In the smaller communities, the physician must be judged as a man by his neighbors. If he is known to be a regular graduate in medicine and is a man of good intelligence and good moral character, he should be trusted to the point where it is mutually agreed that special consultation is required and his advice followed as to such consultation. Many of the criteria that would be applied to the consideration of a lawyer, an engineer, or a good business man could and should be applied in selecting a physician—that is, intelligence, character and general standing with the people he has served.

“It may be asked, how shall one proceed to secure the special information required intelligently to apply the above rules? In the larger communities, there is no reason why the city health department should not furnish such information relating to the college of graduation and society memberships. The name of the secretary of any county society could be readily secured from the local health officer and the fact ascertained as to whether any particular physician is a member of such society. In the larger cities the medical libraries have the directories of the American Medical Association, and, for some localities, local directories giving such information. An inquiry directed to the city or state health department about any particular physician as to whether or not he is actually a licensed graduate in medicine would receive attention. At least one should have the ele-

mentary common sense to take no chances on a man who is not a full-fledged graduate in medicine."

PELLAGRA

This is one of the diseases that is caused by eating the wrong food. It is especially common among the peasants of certain European countries who live largely on corn-bread and occurs fairly frequently in certain sections of the Southern States. Late winter or early spring is the season when pellagra begins to make its appearance. All of the foods that are valuable in preventing and curing this disease are not yet known, but we do know that plenty of fresh milk, fresh lean meat and fresh vegetables will cure and prevent it. The first signs are usually a redness of the skin, followed by peeling and painful cracks on the back of the hands or the feet, or both. Loss of appetite, indigestion, diarrhea, nervousness and low spirits are other common symptoms.

A carefully selected diet is the most essential feature of a cure, a large amount of milk and lean fresh meat being necessary. The best procedure is prevention by proper diet. Treatment should always be directed by a physician. (See *Diet.*)

PERICARDITIS

(See *Heart.*)

PERITONITIS

The abdominal and pelvic cavities of the body are lined with a membrane known as the peritoneum. This membrane may become infected in various ways—with the germs

of tuberculosis, through injury, through the spread of infection from the intestines or appendix.

The symptoms of acute peritonitis are sharp pain apparently in the intestines, nausea and vomiting, swelling of the abdomen. Prompt treatment is most important. A few hours' delay in calling a physician may mean that the inflammation is past cure. Acute peritonitis usually reaches a climax in three or four days. Long drawn out, chronic peritonitis is frequently a form of tuberculosis.

PHOSPHORUS POISONING

In the days when white phosphorus was used in making matches a disease called by the workers "phossy jaw" was not uncommon. This disease is not only extremely painful but extremely disfiguring. The jawbone is often so seriously affected that it is necessary to remove it wholly or in part. The fact that phosphorus poisoning makes its effect on the human body so evident has led to the abolition of the use of white phosphorus in the match industry, and the disease is now largely a matter of history.

PHYSICIAN, STANDARDS FOR SELECTING

(See "*Patent*" *Medicines and Advertised Cures.*)

PIMPLES

(See *Eczema* and *Cosmetics.*)

PINK EYE

(See *Eyes.*)

PIN WORMS

(See *Worms*.)

PLAGUE

(See *Bubonic Plague*.)

PLAYGROUNDS

Luther Burbank said: "Every child should have mud pies, grasshoppers, water bugs, tadpoles, frogs, mud turtles, elderberries, wild strawberries, acorns, chestnuts, trees to climb, brooks to wade in, waterlilies, woodchucks, bats, bees, butterflies, various animals to pet, hayfields, pine cones, rocks to roll, sand, snakes, huckleberries and hornets, and any child who has been deprived of these has been deprived of the best part of his education."

Our cities are cheating childhood gradually out of backyards, back alleys, vacant lots and attic playrooms. It is increasingly difficult for children to have the normal, natural play, the mud pies, the trees and sand they need. The only way in which these things can be made up to them in a large city is by reserving public playgrounds. Play space is something every parent should consider in selecting a home. Is there a playground near? Is there a backyard or a piece of a backyard? Even a small yard may hold much play if it be fitted up with a few pieces of play apparatus. Most important of all for small children is a sandpile. For larger children a swing and a horizontal bar take up little space. If there is room, a hand ball court or a volley ball court and a croquet ground can afford amusement for the whole family.

Parents should concern themselves with securing neighborhood playgrounds for their children and supervised play hours for them. Neither the parents nor the municipal authorities are doing their duty, unless every child in their city has a place to play outdoors in safety and under direction. Only by special effort can city children be given the normal play that is their birthright and which they must have to develop into healthy, efficient men and women. Public playgrounds, or even streets reserved at certain hours for play, have done much to reduce street accidents among children.

Country children, with all outdoors to play in, often woefully lack opportunities for play. A certain amount of light work on the farm is not harmful to a child, but plenty of time must be left for play, and country school playgrounds should have play equipment and directed play.

Adults should never forget that: "A child who does not play not only misses much of the joy of childhood but can never be a fully developed adult. He will lack in manhood many of the qualities most worth while because many of the avenues of growth were unused and neglected during the most plastic period of his life." * Suggestions for laying out and equipping home playgrounds and public playgrounds may be secured by writing to the Playground and Recreation Association of America, 315 Fourth Avenue, New York City.

PLEURISY

The pleura is a membrane covering the walls of the cavity of the chest in which the lungs are located. In pneumonia, this membrane frequently becomes inflamed—a condition known as pleurisy. Chronic pleurisy is usually a

* "Psychology of Childhood," by N. Norsworthy and M. T. Whitley.

symptom of tuberculosis. Acute pleurisy and fluid in the pleural cavity are now considered tuberculous in origin in many instances, and should be followed by a long period of rest when the acute condition subsides. Inflammation may occur when the lungs are unaffected, as a result of exposure to cold, usually associated with extreme fatigue.

The chief symptom is sharp, stabbing pain in the side running from front to back. Chilliness, fever and headache may accompany the pain.

The patient should receive the immediate attention of a physician. Rest in bed is an important part of treatment.

Empyema. As a sequel to pleurisy pus may gather in the lung cavity in large quantities. This condition, called empyema, is especially common among undernourished children. The patient has difficulty in breathing, coughs and runs a high temperature. Empyema is likely to cause death if an operation is not performed to let out the pus. Before this method of treatment was discovered, deaths from this cause were many. (See *Tuberculosis*.)

PNEUMONIA

When a person suddenly has a severe chill followed by a high fever, difficult breathing and a pain in his chest, a physician should be called in at once, for he may be suffering from pneumonia. This disease is a close rival to tuberculosis as a cause of sickness and death in this country. It thrives in places where people live under crowded conditions and is most frequent during the spring and winter months.

Pneumonia takes many forms and is caused by a germ or germs that enter the body through the nose or throat. It

is probable that, like tuberculosis, pneumonia is sometimes spread by people who spit in public places. Pneumonia-infected sputum, even when dried, may be infectious. The germ is a frequent inhabitant of the throats of healthy people, but does no harm as long as the power of resistance is not lowered. It is usually spread through direct contact with a patient or with a well person who is a carrier, or perhaps indirectly through objects handled by a patient.

A person in robust health who is not tired or has not been subjected to exposure to other forms of illness or to extremes of temperature is usually able to resist pneumonia. It is a disease which occurs most frequently among children, old people, alcoholics and those who are in a run down or tired condition. It often attacks children when they are weakened from one of the children's diseases, being a common complication with measles, whooping cough, diphtheria, influenza and inflammatory diarrhea. Conditions which favor the development of the disease are an inflamed condition of the air passages due to a neglected cold, extreme fatigue followed by long exposure to cold or wetting, exposure to cold after staying in an over-heated house, office, factory, foundry or crowded theater.

A pneumonia patient must be under the care of a physician and should have some one in constant attendance. The most essential factors in treatment are as follows: See that the patient gets plenty of cold, fresh air. Keep the windows of the sickroom wide open. If there is a porch, move the bed onto it. Keep the patient well-covered and warm, with hot water bottles if they are needed. Give only liquid food. Disinfect dishes and all articles used in the sickroom. Burn discharges from the nose and throat. Allow no one in the

sickroom except those needed in taking care of the patient. The nurse should always disinfect her hands before mingling with other people and should wear a mask when caring for the patient.

Sera for the treatment of certain types of pneumonia are gradually being perfected and hold out a promise of a material reduction in the mortality from the disease.

POISONING

When a person is seized suddenly with severe cramps and attacks of vomiting, there is always the possibility that he may have taken some poisonous substance. Sometimes a bottle or glass from which the poison has been taken may be found. Sometimes the patient himself is able to give a clew.

In such cases a physician should be called at once. When the poison is known, the physician should be told in advance, so that he can bring the proper antidote. The following first aid measures should be taken while waiting for medical aid:

Cause vomiting. Mustard and water, salt and water, and syrup of ipecac will do this; that is, they are all good emetics. Don't worry about the exact dose, but give it quickly. Have the poisoned person drink large quantities of lukewarm water, so that, by vomiting, all the poison will be washed out of the stomach.

POLIOMYELITIS

(See *Infantile Paralysis*)

POLLEN(See *Hay Fever*.)**PORK, INFECTED**(See *Trichinosis*.)**POSTURE**

One rarely sees a "down and outer" who stands up straight. He drags his feet, he hangs his head, he stoops. On the other hand, the successful man stands up to life. One of the most important of all health habits is the habit of keeping a good posture. Only when the head is erect, the chest free and the whole body in proper alignment, can the organs do their work properly. When the head droops, a strain is placed on the muscles of the back of the neck and shoulders. When the shoulders stoop, the chest becomes flattened, and the lungs are cramped for room. When the body slumps forward at the hips, the organs in the abdominal cavity are not held in their natural position. At the same time, all the muscles are working a little harder than if the body were erect, for they are making an effort to hold the body from falling forward. Small wonder if success in business is associated with erectness. Small wonder if slouching lessens one's efficiency. Good posture means poise and power.

The time to correct bad posture habits is in early childhood. Some of the principal causes of faulty posture in a child are:

(1) Lack of the essentials of a proper diet. This interferes with the development of the bones and with normal

growth. Bowlegs is often associated with a posture fault sometimes due to lack of proper nutrition.

(2) Disease or abnormality affecting the child's breathing. Adenoids, by causing difficulty in breathing, often affect the child's posture.

(3) Poor vision.

(4) Flat foot. Proper shoes, natural poise on the balls of the feet and not on the heels, strengthening exercises and proper general hygiene are the remedies.

(5) Constant sitting in the schoolroom at a desk which is not the right height. The seat and desk of the school child are most important factors in his health. The seat should never be so high that the child cannot touch his feet to the floor. The height of the desk should be so adjusted to the height of the seat that it will never be necessary for him to crook over in order to write at the desk, or to strain his arms and shoulders by the effort of writing on too high or too low a desk. Every school should be provided with desks and seats that are adjusted to the height of the child, and parents should see to it that the health of their children is not being endangered by incorrect seating.

(6) Carrying books under one arm. One of the commonest defects of posture among children is the curved spine and round shoulders, due to carrying books on the same arm constantly to and from school. Every child should be provided with a bag for carrying his books, and be made to use it.

(7) Wrong habits in infancy and early childhood:

(a) Too high pillows and too soft mattresses and bed clothes pressing on toes. (A roll can be

placed under bed clothing at the foot of the bed.)

(b) Mother's method of carrying child.

(c) Non-adjustment of chairs within the home.

Parents should be constantly watchful to encourage children to sit and stand in correct position. For good sitting posture, one should sit so close to the desk that the trunk is straight, shoulders in place and head high. The bending forward should be at the hips. In standing, the weight should be carried on the balls of the feet, the head should be erect with body balance such that the abdomen will not project forward.

If a child continuously stoops or carries his hips forward, even though he is encouraged to sit and stand correctly and is given a properly adjusted seat at school, he should be taken to a good orthopedist, that is, a specialist in structural difficulties of the body. It is useless to scold the child for not standing straight, when there may be some weakness that is hampering his development.

A good posture cannot be maintained either in childhood or adult life unless the muscles are kept strong by exercising. If the shoulder muscles are too weak to hold the shoulders in their normal position, the chest tends to drop in. If the muscles of the back and abdomen are not strong the body slouches forward.

Games and outdoor sports, such as walking, swimming and tennis, are excellent remedies for poor posture. Carefully prescribed exercises, if practiced daily, will help the muscles to do their work of holding the body in a healthful position.

POTT'S DISEASE

(See *Tuberculosis*.)

PREGNANCY

(See *Pre-Natal Care*.)

PRE-NATAL CARE

The care of a baby begins nine months before it is born. No mother gives her baby a square deal unless she puts herself under the care of a physician or maternity center or pre-natal clinic at the beginning of pregnancy, is examined regularly and attends strictly to advice regarding diet, exercise and general care of herself. Furthermore, she in this way insures herself against danger of complications occurring at the birth of her child, which may endanger the lives of both mother and child. Ignorance of what to do and what not to do during pregnancy is the cause of many babies being still born, many dying at birth and many never reaching the age of one year.

A competent physician knows all the danger signals that may attend pregnancy. By watching out for these signs, he can, in most cases, avoid any danger that may threaten mother and child and insure a safe delivery and a healthy baby. A well-known public health physician says, "reduction in the death-rate of mothers and babies as a result of pre-natal care can be effected with mathematical certainty. It is simply a question of providing the type of care that has already been recognized and standardized."

The marked effect of competent pre-natal care on the death rate for mothers and babies has been demonstrated again and again. In Boston, the pre-natal nursing of the

Instructive Visiting Nurse Association reduced the maternal death rate for the year 1920 from seven in every thousand to two in every thousand, among those receiving the service.

Nowadays there is little excuse for a woman in a town or city not having good care at this time. The services of visiting nurses and maternity centers are at her disposal for a moderate fee. Nursing organizations in many large cities offer pre-natal instruction by a visiting nurse free of charge and furnish attendance at time of delivery and daily visits to mother for the first eight or ten days after delivery for small fees.

A physician can save a woman much unnecessary discomfort during pregnancy. A person starting out on a long motor trip usually takes his car to the garage for overhauling and repairs. In the same way, a woman, when she finds that extra work is to be required of her body, should have it put into the best possible condition and kept in the best possible condition for doing this work. For example, a physician can often greatly relieve nausea during early pregnancy by preventing constipation and by regulating the patient's diet. Backache and abdominal pain may be prevented by a proper maternity corset or abdominal support. If the heart or kidneys give evidence of suffering from the extra load of work, the physician knows how to relieve them so that they can continue to function for two.

The physician will know best what the individual patient should eat and how she should regulate her manner of living. There are, however, certain general do's and don't's for expectant mothers that apply in every case. Following are some of the things she should do:

1. Visit a physician, clinic or maternity center as soon as she finds she is pregnant and at least once a month thereafter.

2. If working in a store or factory, stop work two months before the baby is due to arrive. If doing her own housework, avoid lifting heavy things and running a foot-power sewing machine.

3. Eat simple, nourishing food that is easily digested. She should not eat meat more than once a day and should avoid fried foods, highly seasoned foods and rich foods. The evening meal should always be light. A cup of black coffee or some unsweetened crackers taken the first thing on awaking sometimes relieves morning nausea.

4. Drink six glasses of water a day.

5. Take daily outdoor exercise. Walking in the open air is one of the best forms of exercise. Golf and dancing in moderation and sea bathing, where there is no surf, are safe for the first six months. However, exercise should never be taken to the point of fatigue.

6. Take a bath daily. Hot baths are not advised. The water should be tepid or cool. If a woman has always taken cold baths they may be continued.

7. Sleep at least eight hours every night and, if possible, rest an hour every afternoon.

8. Wear clothes supported from the shoulders and comfortable low-heeled shoes. Most women need the support of an abdominal supporter or abdominal corset at least during the last few months.

9. Take special care of her teeth. This is necessary because the lime generally used for the mother's teeth is absorbed in forming the child's bones. The resulting acidity can be offset by brushing the teeth on rising, before re-

tiring and after each meal with bicarbonate of soda or milk of magnesia. To provide enough lime for two the mother should drink a glass of milk every day. She should have her teeth put in good condition at the beginning of pregnancy.

10. Avoid constipation.

11. Ask the physician how to take care of breasts and nipples to prevent discomfort after the child is born.

12. Have plenty of recreation. At no time is it more important to avoid worry and have a good time than during pregnancy.

A pregnant woman should go to concerts and keep up the social life to which she is accustomed, so far as she can without taxing her strength and going without sleep.

Some of the things a pregnant woman should not do are these:

1. Take the advice of relatives and friends without consulting her physician.
2. Go on long tiring trips and long motor rides.
3. Allow herself to become chilled.
4. Expose herself to communicable diseases.
5. Take douches except on the physician's advice.

She should always consult a physician on the appearance of any of the following disorders:

Continued and long vomiting.

Dizziness.

Spots before the eyes.

Swelling of the face, hands, feet or legs.

Bleeding from any part of the body.

Severe headaches.

Swollen veins.

Hemorrhoids.

Directions for making clothing for the baby may be secured from a maternity center or visiting nurse.

For six weeks after the baby is born, the mother should be under the care of a physician or maternity center.

PRE-SCHOOL CLINICS

(See *Clinics and Dispensaries*.)

PRIVIES

In the country and in small towns where there is no public water supply and no sewage system, the old-fashioned privy is generally in use. Carelessness in constructing privies and in disposing of excreta has been the cause of many an outbreak of disease. One such privy is a danger to a whole community.

First of all a privy, if it be the usual pit privy, must never be placed within 100 feet of a well or other body of water. Otherwise some one may drink water polluted by its drainage. Too great care cannot be taken in this matter. To be safe a privy must be fly-proof. There should be no crack or opening for a fly to enter the pit or box of the privy and the seat covers should be so attached that they will close automatically.

Usually the privy is built over a pit which should be deep, with a removable door or board in the back from which the excreta may be removed. A privy built with a removable container in the back is more easily cared for and kept odorless than one built over a pit. A watertight box or hogshead may be used for a container. The con-

tainer should be ventilated with a screened opening and deodorized daily with chloride of lime. A very satisfactory method of keeping a privy sanitary is to cover each deposit with a sprinkling of loam. A pail or box of loam and a shovel should be kept in the privy for this purpose.

The only practicable way to dispose of the contents of a privy in the country is by burying it. The place selected should be at least a hundred yards away from any water supply and should not be on land draining toward a water supply. It should be placed in trenches and thoroughly covered over so that it may not be dug up by animals. The field used should be one which is not to be cultivated for at least six months. In parts of the country where hookworm disease is common, the field should not be cultivated for twelve months. (See *Hookworm Disease*, *Typhoid Fever*, *Water*.)

PROTEINS

(See *Diet*.)

PROTEIN SENSITIZATION THEORY

(See *Asthma* and *Hay Fever*.)

PSYCHOANALYSIS

Psychoanalysis is a method of diagnosing and treating mental and nervous disorders. It is based on the theory that as man has developed a high civilization he has had to overcome his primitive instincts to a large extent and bury them in the unconscious part of his mind. These suppressed cravings affect the conduct of the individual and cause mental conflicts which may result in strange obsessions, nervous disorders, crime or merely restlessness or

discontent. The psychoanalyst aims to bring back into the field of conscious memory all repressed, unbearable ideas stored away there and to show the patient the connection between them and the symptoms he is experiencing. He thus removes the latter by making the patient understand the cause; in other words, he directs the process of self-discovery.

This process is often very slow for it involves the study of the patient's conscious and unconscious mental life over a long period of time. Word association is one method of discovering the unconscious mind; that is, the study of what word or words are associated in the patient's mind with any given word. The study of the patient's dreams is another important factor.

In the hands of competent trained men and women, psychoanalysis may be a valuable method of treating nervous disorders. Unfortunately, many people calling themselves psychoanalysts have made of psychoanalysis a fad, have dabbled in it, have lectured and written about it and even attempted cures. No one should consult a psychoanalyst without being sure that he is being treated by one who has a thorough knowledge of the subject.

PTOMAIN POISONING

(See *Botulism*.)

PUBLIC HEALTH LABORATORIES

(See *Health Officers*.)

PUBLIC HEALTH NURSING

(See *Nurses*.)

PYORRHEA(See *Teeth*.)**RABIES or HYDROPHOBIA**

Rabies is caused in human beings by a bite from a so-called "mad" dog or other animal which has the disease. Wolves, jackals, foxes and hyenas frequently have rabies. Cattle, sheep, goats and cats have it occasionally.

It is a mistake to kill a dog immediately after it has bitten some one. The dog should first be shut up for ten days and watched carefully to see if any symptoms of rabies develop. A rabid dog is easily excited and usually inclined to attack everything in its way. As the disease progresses, paralysis of the hind legs sets in, which gradually spreads all over the body. If the dog is killed, the head should be kept and sent to a laboratory for microscopic examination.

The symptoms of the disease in a human being are headache and fever, rigidity of the muscles and difficulty in swallowing. In the last stages the mind becomes affected, saliva drips from the mouth and the body is paralyzed. The disease is always fatal unless treated early.

The best way to prevent rabies is, naturally, to keep from being bitten by a dog. Muzzling of all dogs for a period of two years is advocated as a method of practically exterminating rabies. The following measures are recommended for controlling the disease: License fee and tag for all dogs; owners to be legally responsible for damage inflicted by their dogs; education of dog-owning public to the danger of the spread of rabies; compulsory reporting of all cases or suspected cases of the disease. Recently a preventive vaccine has been prepared which, when given to dogs, usually pro-

fects them from rabies; consequently an additional important measure is the vaccination of all dogs.

When a person is bitten by a dog or other animal that is suspected of having rabies, the wound should be cauterized immediately with strong nitric acid. If it is found that the animal has rabies, or rather if it cannot be proved not to have rabies, the Pasteur treatment should be taken. Since it takes from fourteen to forty days and sometimes longer for the disease to develop after infection, there is almost always time to ward off rabies by this method. The Pasteur treatment is named for the scientist, Louis Pasteur, who discovered it. He prepared an emulsion from the spinal cord of a rabbit infected with rabies which would render a human being immune. When the dog cannot be identified, it is best always to use the treatment, except in places known to be wholly free from rabies.

RADIUM

(See *Cancer*.)

RATS

Rats are not alone pests; they are dangerous carriers of disease. They may carry disease in two ways: by coming in contact with germ-infested wastes in sewers or privies, or by being infected with diseases which may be transferred to human beings. Rats abound in filthy places, along garbage-strewn wharves, in sewers and on garbage dumps. They may come directly into one's house from contact with diseased human excreta and leave the germ upon the food they find in the kitchen or pantry. One disease that rats may conceivably carry in this way is typhoid fever.

The rat as a carrier of bubonic plague is one of the worst public health menaces, the disease being transmitted to man by the bite of the rat flea. So serious is the danger of the spread of plague in this way that no ship is allowed to enter the United States ports from any port thought to be infested with plague until vigorous measures have been taken to destroy all the rats on shipboard. It should be a measure of international sanitation that all vessels be required to fumigate for rats three or four times a year, regardless of what ports they have entered.

Other diseases that rats are supposed to give to human beings are infectious jaundice, a certain kind of tapeworm and other intestinal parasites. They are also thought to be an indirect cause of the disease known as trichinosis. This is a disease caused by a parasite which is sometimes found in pork. Hogs frequently become infected by this disease by eating infected rats and the cycle is completed when the human being eats the meat of the infected hog.

The trapping of rats should be a part of the duties of health officials in every community. Every householder should do his part by never tolerating rats in his house and by keeping all foods covered. The rat proofing of building foundations is another important measure.

RECREATION

"Play for grown people is recreation—the renewal of life. For children, it is growth—the gaining of life."—Joseph Lee.

Recreation is not a luxury; it is a necessity for mental and physical health. The play of a child is the most important thing he does. In his playtime he is developing

his heart, his lungs and his muscles, building up resistance to disease and literally building his body. At the same time he is learning self-control, teamwork and many other valuable lessons and developing his imaginative and creative powers. Dr. Woods Hutchinson regards children's play as of so great importance that he says "better a playground without a schoolhouse than a schoolhouse without a playground." Joseph Lee calls play the "essential part of education."

Parents should plan definitely for their children's hours of recreation and should play with them as much as they can. The high mortality in orphanages has been attributed in part to the fact that the babies, even with the best of care, do not have a mother to play with them. The solemn-eyed, old-before-their-time "little mothers" in large families testify to the ill effects of too little play in childhood.

Play in the sunlight and fresh air is the best known preventive for tuberculosis and rickets. The International Congress on Tuberculosis has declared that "playgrounds constitute one of the most effective methods for the prevention of tuberculosis and should be put to the fore in the worldwide propaganda for the diminution of the destruction of human life." The child who suffers from malnutrition especially needs outdoor play and, most of all perhaps, the nervous, high-strung child needs it. Swimming and ball and playground games are a great tantrum preventive and group games a great corrective for the kind of nervousness that is really self-centeredness.

Not only is play a preventive of sickness, but it frequently works cures. Physical directors, heads of institutions and school physicians often find play one of the best

medicines. It is an important part of the treatment of the insane and those suffering from nervous disorders.

To be many-sided is a blessing. A person who likes outdoor sports, who enjoys the company of other people, who sings and dances and can lose himself in a book is not likely ever to find life boring. Such a person can meet the jars and jolts of life without breaking under them because he has plenty of outlets for his emotions and little time to brood upon his woes. Lee * tells of meeting, on a yachting trip, a Swedish sailor, broken-hearted by the wreck of his boat, who poured forth his soul every evening in playing on a tin pipe. "Probably," says Mr. Lee, "that nineteen-cent pipe kept him alive."

One of the most healthful occupations in the world is riding a hobby. Everybody should have at least one. The man who talks about his garden every time you meet him, who can hardly wait to get home at night to see how his carrots and radishes are growing, is not likely to have a nervous breakdown or to get premature hardening of the arteries.

Under modern civilization, especially under conditions of modern industrial life, the natural needs and instincts of man are cheated. These must be made up for in hours of leisure if the person is to be healthy in mind and body. A youth from New York City was asked in a questionnaire at college what was his favorite out-of-door sport. He filled in the space for reply with the word "skiing." When questioned later, he confessed never to have been on a pair of skis but said "he liked to watch it in the movies." His was the pathetic state of many another person who has the habit of watching movies and baseball games to the ex-

* "Play in Education," by Joseph Lee.

clusion of other forms of recreation. Most grown people have far too little active play. Movies and ball games may afford pleasant relaxation from the day's work, but they should be supplemented by activities that are self-expressive. What kind of activity affords the best recreation depends on the physique, the occupation and the temperament of the person. It may be something as vigorous as tennis or boxing or football. It may be milder, such as golf or making a garden, or it may be taking part in amateur dramatics or singing in a glee club, but it should be doing something—not just watching something done.

The essentials of healthful recreation are these:

1. It should be a complete mental and physical change from one's regular occupation.
2. It should be something the individual enjoys thoroughly.
3. For most people it should afford a certain amount of vigorous exercise.

Many forms of commercialized recreation are harmful, breaking down instead of recreating mind and body. Dancing, beneficial in itself, is unwholesome when performed in an ill-ventilated hall in promiscuous company. Much of the recreation at amusement parks is harmful in that it excites the emotions without giving them any real outlet. The best test of recreation is whether or not it gives renewed strength and renewed zest for living.

Certain organizations are doing valuable work in providing opportunities for healthful recreation. Among them, the Boy Scouts, Girl Scouts, Camp Fire Girls, Community Service Committees, Y. W. C. A., Y. M. C. A. and the Playground and Recreation Association of America are outstanding.

REGULATING FOODS

(See *Constipation* and *Diet*.)

RHEUMATISM

Rheumatism is a much-abused term. It is used to cover a variety of aches and pains in the muscles, nerves and joints. Often what is called rheumatism is the result of an infection in some part of the body. Again it may be due to an injury or misplacement. So-called rheumatic pains in the legs and knees may be due to fallen arches.

Acute rheumatism, also known as inflammatory rheumatism or rheumatic fever, is a very painful and serious disease. It attacks the joints, particularly those of the hands, feet, knees, elbows and shoulders and is accompanied by high fever. Sometimes the patient is delirious. Frequently the heart is seriously affected, especially among children and young people. St. Vitus Dance is sometimes an after-effect of this disease. The cause of rheumatic fever is not certainly known, but it is thought to be a germ which attacks the joints and other portions of the body. It is known to be sometimes associated with infected tonsils.

The sufferer from rheumatic fever should receive the best medical care obtainable, and competent nursing. The main object of treatment should be to bring the patient through the disease with as little injury to the heart as possible. It is sometimes difficult in the case of a child to identify the disease, since the pains in the joints are often slight, such as so-called "growing pains."

Chronic rheumatism, more correctly called chronic arthritis, attacks the joints, causing pain and swelling, and is common among middle-aged and older people. The joints are

at first flexible, but eventually become stiff. This disease is probably due to a germ. Indirect causes of chronic arthritis are overwork and prolonged exposure to cold and dampness.

In any form of rheumatism it is important to live a simple life, eating plain food, avoiding alcohol, keeping the bowels open and getting plenty of sleep. A physician should always be consulted.

Even slight symptoms of rheumatic pain in children should receive prompt attention. "Growing pains" are always to be taken seriously, and any inflammation or tenderness of the joints should at once receive medical attention. Even slight attacks of rheumatism may be accompanied by serious heart disturbances among children. A child who has any rheumatic pains needs the attention of a physician, who should be asked to give special rules regarding the care of such a child.

Any one, old or young, who suffers from persistent rheumatic pains should have a thorough medical examination, including X-ray examination of teeth, examination of tonsils and attention to the condition of the feet. (See *Fallen Arches*, *Focal Infection*, *Teeth* and *Tonsils*.)

RICKETS

Rickets is a disease of early childhood caused by lack of proper food and poor living conditions, especially lack of sunshine. It is one of the commonest diseases among children and one of the most serious, because of its after-effects. Signs of this disease are pallor, fretfulness, sweating about the head and neck, indigestion and constipation, slowness in learning to sit up, stand or walk or delay in cutting

teeth. If any of these signs are noted, a physician should be consulted at once. Neglect of rickets in the early stages may cause the child to develop crooked and brittle bones, bad teeth and other serious deformities.

Regulation of the child's diet under the physician's direction and direct sunlight on the body are the cure. Cod-liver oil, because it contains Vitamin D, the anti-rachitic vitamin, is usually prescribed both for prevention and cure. Like most diseases, rickets is more easily prevented than cured.

Plenty of fresh milk, fresh vegetables and fruit in the child's diet and plenty of play in the sunshine and fresh air are foes to this disease. (See *Diet and Housing*.)

Bowlegs. Bowlegs is frequently the result of rickets. This condition should never be neglected but should be brought promptly to the attention of an orthopedic specialist. Otherwise the child may be deformed throughout life.

RIGG'S DISEASE

(See *Pyorrhea*.)

RINGWORM

This is a common and very contagious disease of the skin due to a parasitic fungus. It begins as a small red spot, scaly in the center, more or less round and containing small blisters. When it appears on the scalp or the face, it is often called "Barbers' Itch." Sometimes scrubbing with brush and water is all the treatment necessary. In more severe cases a strong antiseptic solution is needed. Hairs on the diseased surface must be pulled out so that

the skin may be washed thoroughly. It is well to see a physician promptly.

ROACHES

(See *Vermin.*)

ROUND WORMS

(See *Worms.*)

RUPTURE

(See *Working Conditions Injurious to Health.*)

RURAL COMMUNITY HYGIENE

The time was when the child brought up in the country had a better chance for health than the city child. The reverse is true to-day of the average country child. A study made by the United States Children's Bureau in 1919 showed a larger percentage of country children with physical defects than city children. With all its advantages of plenty of air and sunshine, the country has more hazards to health than the city. With all its disadvantages of crowding and dust and, often, poor housing, the average city is a more healthful place than the country. Even New York City, with its millions herded together, usually has a death rate lower than the rest of the state. The reason is not far to seek. Crowded together in cities, people have been forced to protect themselves by the sanitary regulation of living conditions, by strict quarantine in case of communicable disease, and by better education on health matters of both school children and adults.

Rosenau * describes the situation as follows: "Rural

* "Preventive Medicine and Hygiene," by Milton J. Rosenau.

dwelling, schools and meeting houses are often unsanitary, crowded and dark. Sewage disposal is apt to be primitive and the control of insects, rats and vermin difficult and neglected. Heating, lighting and ventilation are often defective. There is plenty of sunshine in the fields but often none in the houses. Further, it is rather difficult for each farmhouse to surround itself with the tidy environment equal to that of a city park. The best medical service has a tendency to desert country practice for city allurements."

In the city the water supply, the milk supply and the disposal of garbage and sewage are public concerns publicly controlled. In the country often each family is a law unto itself. The most frequent sources of disease in the country are:

A polluted milk supply.

Milk from tuberculous cows.

Water polluted by drainage from barnyard or privy.

Flies.

Another serious aspect of country life is the fact that quarantine regulations are not usually as rigidly enforced as in the city.

When the people of rural sections have once awakened to the actual money saving that competent public health officials can effect, they will demand adequate service from the state and county.

A bulletin of the United States Public Health Service * comments on the lack of rural health service as follows:

"That over 87 per cent. of our rural population are as yet unprovided with health service approaching adequacy,

* "Extent of Rural Health Service in the United States," 1920-1924, by S. S. Lumsden.

provision for which would mean a financial saving as well as the prevention of much mental and physical suffering and much unnecessary loss of human life, is a matter which should be of serious and immediate concern to all who have a genuine interest in our national welfare." (See *Milk, Privies, Water and Sewage.*)

SANATORIA FOR TUBERCULOSIS

(See *Tuberculosis.*)

ST. VITUS DANCE

St. Vitus Dance occurs more frequently in the early years of school life, between five and fifteen, than at any other period and more frequently among girls than among boys. The cause is not definitely known. It frequently follows rheumatic fever. Heart disease is thought by some doctors to be a related condition. A tendency to the disease seems to occur in certain families. Very bright, over-studious young girls, especially of the excitable type, form a large number of cases. Baker says that "in general, prolonged nervous fatigue or over-excitement during the first few years of life, long-continued undernourishment, with anemia and chronic intestinal indigestion, are the common predisposing causes."

The first sign of Saint Vitus Dance is usually restlessness. The patient cannot sit still; he shuffles his feet; he is clumsy, dropping things and knocking them about. Twitching of the muscles of the face and jerky movements of the body are usual symptoms and irritability and general lack of emotional control are characteristic.

Prevention of this disease consists in nourishing food, plenty of outdoor play and avoidance of late hours and ex-

citement for the growing child. Special precautions should be taken with nervous children. Even in the early months of a child's life the foundations for St. Vitus Dance may be laid.

The first symptoms should be brought to the attention of a physician, for the disease, if neglected, may have injurious effects upon the heart. Rest, prevention of excitement, and nourishing food are important items in treatment. The school child suffering from St. Vitus Dance should be taken out of school at once and kept at home until the physician pronounces him able to return.

SCABIES

Scabies, commonly called "the itch," is a very contagious and very annoying disease of the skin. It may be caught by direct contact with a person who has it or from clothing and bed clothing used by the person. The eruption usually comes out on the fingers and on the wrists and elbows, but it may be present in the armpits, on the legs and on the feet and other portions of the body. It is caused by a small parasite called an "itch-mite," which burrows under the skin and lays its eggs there. The only way to cure this disease is to apply to the skin something that will kill the mite. This is best done by taking a sulphur bath or by applying sulphur ointment, under medical direction. Scabies is another reason why one should never be careless about using towels and bed clothing used by other people.

SCARLET FEVER

This is one of the most contagious of the children's diseases. It is contagious from the first signs, and is usu-

ally transmitted by personal contact between the sick and the well. The poison is probably given off from the nose and throat and may possibly also be carried by articles handled by the patient and by discharges from the ears (when discharges occur during or following the acute stage of the disease). It has also been carried by milk.

Scarlet fever begins with a chill, vomiting or convulsions and fever. Frequently the patient complains of sore throat. In ordinary cases these early signs are followed in a day or two by a rash. Little red points close together appear first on the neck and chest, and soon the rash is over most of the body and very brilliant in color. When these signs appear, a physician should be called in at once and the following rules observed even in mild cases:

1. Put the child in a room by itself.
2. Put on a loose garment or kimono when entering the sickroom. This should be taken off when leaving. Cover the hair with a cloth or cap. Wash hands and face with soap and water after caring for the patient.
3. Collect all discharges from the patient's mouth, nose and ears into pieces of old linen, cotton, gauze or paper. Then burn them, as they may spread the disease.
4. Keep dishes, spoons, knives and forks used by the patient separate from those used by the rest of the family. Sterilize dishes by washing in boiling water. Disinfect all clothing worn by the patient. Ask the physician how to do it. They must not be washed with things used by other members of the family.

These precautions should be taken in even light cases, since the germs scattered by a person who has a light case may cause others to have the disease severely.

The best medical care and good nursing are absolutely necessary in scarlet fever. Sometimes grave complications develop, which may be fatal or impair the child's health permanently. Infection of the ears, enlargement of the glands of the neck, pneumonia and disturbance of the kidneys are some of the complications for which a physician is on the lookout.

Recently an immunity test, known as the Dick test, has been developed, which shows whether or not a child is susceptible to scarlet fever. It is like the Schick test for diphtheria. A scarlet fever "vaccine" is being used for the prevention of the disease, and an antitoxin is also being used for treatment, both with very promising results. The health officer or the physician will be able to advise parents as to the timeliness of these procedures.

SCHICK TEST

(See *Diphtheria*.)

SCHOOL CLINICS

School health examinations and the employment of school nurses have revealed the need for special clinics for school-children. It is useless to tell a child or the child's parents that his tonsils or adenoids should be removed or his teeth straightened if there is no money to pay for these operations. It is worse than useless to tell a child to get arch supports, if the parents cannot afford to go to some one who will see that the child is properly fitted. For this reason, hospitals in many cities are holding special school clinics. In some instances clinics are held on certain days of the week in school buildings, under the auspices of the Department of Education or the Health Department. The

types of clinics include dental, nose and throat, eye, orthopedic, etc. School dental clinics are becoming exceedingly popular. The work in these clinics is usually restricted to prophylactic cleanings, extraction of abscessed teeth and filling of first molars of the younger children. The work is intended to be educational and preventive rather than corrective. (See *School Health Examinations* and *School Nurse*.)

SCHOOL HEALTH EXAMINATIONS

It is unfair to test a child in arithmetic and geography and grammar and not test his health. Many a backward child has been thought stupid or lazy, when in reality he was handicapped by defective eyesight or adenoids, or some other easily-remedied defect. Furthermore, health should be the foremost aim of every school. An enormous proportion of the ills of adult life can be traced back to neglected defects or weakness in childhood.

"The examination of 1,061 prospective entrants into the schools of New York City showed that two-thirds had physical defects. Of these, 25 per cent. had defective teeth; approximately 26 per cent. hypertrophied tonsils; 23 per cent. defective nasal breathing and 19 per cent. were suffering from malnutrition." * In other series of examinations it was found that from 50 per cent. to 75 per cent. needed the services of the dentist. Nearly all of these defects are easily remedied, and all may lead to serious disorders if neglected. For example, a child may have a very slight defect in his eyesight which might easily be corrected. He continues month after month and year after year to strain his

* "Public Health in the United States," by Harry H. Moore.

eyes. Gradually the effects of this continued strain tell upon his general health. He becomes nervous and irritable and anemic, an easy victim for disease. Another child may have been left with a weakened heart after scarlet fever. A few months of being careful might make him as sound as ever. The weakness is undetected and the child plays basketball strenuously. Result: a permanently strained heart.

Dr. Mary E. Brydon of the Virginia State Board of Health puts the need for school health examinations in this way:

"The authorities of the Commonwealth of Virginia believe that it is the function of the State Board of Education to direct the instruction of the child; and that it is the function of the State Board of Health to help the child to become physically fit to receive the greatest possible benefit from the educational process, in order that the children of the state may develop into strong and efficient citizens with the right attitude toward health as one of the most valuable possessions to be secured."

"The medical examiner, the school nurse and the district nurse," says President Eliot, "should be regular members of every school system in the country, rural as well as urban, and their work should go on incessantly, not for a few days out of the year but all through the year." Dr. Eliot might also have included the school dentist and school dental hygienist as well.

Several states require every child to be examined by a licensed physician when he enters school. Some states and cities require annual inspection by the school physician, the school nurse, the teacher or the physical instructor. The school examination should include weighing, measuring of height, testing of ears and eyes, inspection of teeth, inspec-

tion of nose and mouth, examination of heart and lungs, posture and feet, and an assessment of the child's nutrition. A thorough examination cannot be made unless the child's clothing is removed; at least with the chest exposed. In Virginia, for example, physical inspection of all pupils by the teachers within three weeks after the opening of school is required. Teachers are equipped for this work by special health instruction in the normal schools under the joint supervision of the State Board of Education and the State Board of Health and are advised in their health duties by the county public health nurses.

To be effective, a school health examination must have the coöperation of the parents. When Johnny is sent home with a card saying that he needs to be taken to a dentist or a dental clinic or that his adenoids should be removed, it is shortsighted to delay action. When Mary is found to be underweight, only Mary's parents can insure for her the nourishing food, the extra hours of sleep and the outdoor exercise that she may need.

The aims of school health authorities and parents are identical—the best health and best efficiency of the child. These aims can only be realized when school and parents work together to accomplish them.

SCHOOL LUNCHES

"Between the children that rush home and swallow a hasty bite of unsuitable material and hasten back for fear of being late or else to play with other children, and those who carry a cold lunch composed of food that would not furnish very much nourishment, even if it were not difficult

to digest, there remain probably only a small percentage of children whose lunches are suited to their needs." *

The child who comes home to lunch should be served a light but nourishing meal with one hot dish. The wise mother will see to it that lunch be ready as soon as the child reaches home, and that he be required to spend at least twenty minutes at the table.

If the child carries his lunch, much thought needs to be given to the food values of the articles that go into the lunchbox. For sandwiches, graham or whole wheat bread never less than twenty-four hours old, should be used with a nourishing filling. Mrs. Rose † makes the following suggestions for sandwiches:

"Chopped boiled eggs carefully but mildly seasoned, a nut paste, such as peanut butter, preferably softened by working in a little milk or cream, a dried fruit paste, made of chopped dates, figs or raisins, or a mixture of these, and sandwiches of raisin or date bread." For the older children she suggests: "chopped meat, cheese of various kinds and jellies."

Fruit and a half-pint bottle of milk should always be included. Apple-sauce, stewed raisins, stewed figs, canned pears, peaches, etc., may be packed in small jars with tight-fitting covers. For sweets Mrs. Rose recommends plain cookies, gingerbread, sponge cake, baked custard, sweet chocolate or a few dates rolled in sugar.

At its best a cold luncheon is less attractive than a hot one. In the schools of Massachusetts, according to a bulletin published by the State Department of Public Health, "whenever a hot dish has been served at noon the physical

* "Education Hygiene," by Louis W. Rapeer.

† "Feeding the Family," by Mary Swartz Rose.

condition of the children has improved and a higher grade of scholarship has been attained." * The establishment of a canteen for serving hot soup in ten schools of Holyoke, Massachusetts resulted in "marked improvement in the physical condition of the children, and tangible results were seen in the quality of the work done by the children." One child who had been thought mentally deficient began to receive 100 per cent. in some of her studies after the establishment of the canteen. While other factors may have been at work in this case, no doubt proper feeding materially furthered the child's improvement.

Soup or cocoa can be easily prepared by the teacher or by one or two of the pupils, under the teacher's direction. Serving a hot dish at school affords the teacher opportunity to supervise the lunch more than when each pupil eats individually. She can see to it that the children wash their hands before eating and that they spend time enough to eat a satisfying lunch. It is also an opportunity for the teacher to give valuable lessons on food values and the foods that children should eat for health and strength.

In the larger cities it is rapidly becoming the custom to serve complete hot lunches at cost or less. When funds are not available, women's clubs, parent-teacher associations and other organizations sometimes raise money to meet the difference between the expense of maintaining the lunch service and the small prices charged the school children. Special provision should be made for children who cannot afford to buy their lunch, either through a special fund or by allowing such children to perform some simple duties to pay for their lunch. At the same time care must be taken

* "The School Lunch," issued in 1922 by the Massachusetts Department of Public Health.

that no children be marked as objects of charity. The serving of school lunches has been found to be so big a factor in reducing malnutrition and in improving scholarship, that it is to be hoped that the practice will become more general, especially in the rural and semi-rural schools, where the problem has been given less attention than in the large cities.

Parents and teachers can find valuable suggestions on the subject of school lunches in "The Lunch Hour at School," Health Education Bulletin No. 7, United States Bureau of Education, 1920, and in "The School Lunch," published by the Massachusetts Department of Public Health 1922. See also Bulletin No. 37, United States Bureau of Education, 1921, and "Malnutrition and School Feeding," by John C. Gerhart. (See *Diet.*)

SCHOOL NURSE

"One (nurse) at least should be in daily attendance at each school," says J. W. Schereschewsky, Surgeon, United States Public Health Service. The school nurse is the child's best friend and the parents' best ally in keeping their children well and strong. She follows up the health examination made by the school doctor and advises parents in securing medical or dental treatment for children who need it. She watches the backward child to see if he needs medical attention. She suggests special food and possibly other hygienic care for the undernourished. She disinfects cuts and sores. She endeavors to prevent contagious disease in one pupil from infecting the whole school. She prevents children from coming back to school too soon after illness. She advises with parents about the best way to build up a delicate child. In some schools the nurse organizes or

holds, with the coöperation of the teaching staff, posture classes for children who need corrective exercises, nutrition classes for the under-nourished children and their mothers or outdoor classes for those who need to be specially safeguarded against tuberculosis. She is a guiding and stimulating influence in teaching the children the practice of health habits and is a most valuable link between the school and the home.

In rural communities, the need of school nurses is even greater than in the cities, since doctors are often inaccessible and sanitary provisions more likely to be inadequate. In many places the county public health nurse does valuable duty in the schools. (See *School Clinics, School Health Examinations, School Sanitation.*)

SCHOOL SANITATION

When one considers the amount of time a child spends in school, the importance of school sanitation is apparent.

It is unreasonable to expect a child to be well, no matter how healthful his home life may be, if he is spending five or six hours a day in a crowded, badly-lighted, badly-ventilated building. More colds among children are probably due to ill-ventilated schoolrooms than to any other cause.

The essentials of a satisfactory school building are:

1. Plenty of room indoors and out. A large playground with equipment for play; and uncrowded schoolrooms.

2. Some approved system of ventilation that provides—
An even temperature not above 68° in winter.

Sufficient movement of air to provide good circulation without drafts.

As much outdoor air as possible. (See *Ventilation.*)

It is possible to secure at reasonable prices jacketed stoves for rural schools which maintain an even heat. Ventilating systems may also be bought to use with jacketed stoves.

3. Adequate light without glare. (See *Eyes*.)

Window space should be equal to at least one-fifth of the floor space. There should be no windows on front or rear walls, so that neither teachers nor pupils need face the light. It is desirable that windows extend nearly to the ceiling and be so placed that the light strikes the desks from the left. If there are windows on both sides, the teacher can arrange the shades so that the light may be only on the left. The walls of the schoolroom should be dull finished so as not to reflect the light. Light gray, green and light tan are good colors.

Artificial lights should always be shaded so that the glare will not shine into the pupils' eyes. The semi-indirect system is best.

4. Seats and desks adjusted to the height of individual pupils. (See *Posture*.)

5. Toilets scrupulously clean and odorless. If privies are used, they should be flyproof, well-ventilated, deodorized and frequently cleaned. (See *Privies*.) The ill-cared-for school toilet is a menace to health.

6. Washing facilities including hot water (if possible), soap powder or liquid soap in sanitary containers and individual paper towels.

7. Pure water supply and sanitary drinking fountains or individual cups. (See *Water*.)

The janitor of yesterday was all too frequently a man who disliked children and did not dislike dust. To-day the opposite qualities are demanded. He should like chil-

dren to the extent of being interested in their having healthful surroundings and be a sworn foe to dust in the schoolroom. He should also thoroughly understand modern principles of ventilation, heating and lighting. (See *Ventilation*.) Dresslar * quotes a school superintendent of wide experience: "next to the principal, the janitor can become the most important personage in a city school."

The school janitor should understand why dust is dangerous to the health of the children. He should know that it is irritating to the air passages and the lungs and that dust particles may carry the germs of serious diseases.

The best way to keep a schoolroom free of dust is to use a vacuum cleaner daily. Where a vacuum cleaner is not available, daily sweeping is necessary. Some preparation, such as oiled sawdust, should always be used. Oiling floors thoroughly two or three times a year is recommended in a bulletin published by the United States Bureau of Education,† for reducing the number of floating dust particles and hence the bacteria in the schoolroom air.

Careful dusting every day is an absolute necessity for good school housekeeping. Dust may either be taken up with a vacuum cleaner or removed with a cloth moistened with water or with oil. Feather dusters should not be permitted in the schoolroom. Chalk dust is extremely irritating to the throat and lungs. It can be eliminated by using and keeping erasers and chalk troughs scrupulously clean.

Neglected toilets are a menace to health and encourage filthy habits on the part of school children. Toilets should be kept flushed and the seats of toilets and privies should

* "School Hygiene," by Fletcher B. Dresslar.

† "The School Janitor," by John A. Garber, Bulletin 1922, No. 24, Department of the Interior, Bureau of Education.

be scrubbed daily. It is important to wash seats, flush chains and doorknobs frequently and thoroughly. (See *Privies*.)

Some teachers are able to make the pupils strong allies in keeping the building clean by having each room elect a clean school committee. It is the duty of such a committee to inspect and report daily on the condition of school building and grounds. In a rural school, where janitor service is inadequate or lacking altogether, interest may be aroused among the children to the extent of forming cleaning squads to fall to every day and help clean up. The members of these squads should be changed frequently so that pupils will not become sick of the job.

SCIATICA

(See *Neuritis*.)

SCREENS

(See *Home Hygiene*.)

SCURVY

In the days of sailing vessels when sailors were at sea for weeks and months at a time and supplies of fresh food were unobtainable, scurvy was a common disease among a ship's crew. Armies living on canned or salted foods are also likely to be attacked by it. The disease is uncommon among adults to-day, because it is comparatively easy to secure fresh foods in any part of the civilized world. Scurvy does, however, frequently attack babies when they are not getting the right food.

The first signs of scurvy are restlessness, fretfulness and loss of appetite. The baby cries whenever touched or handled; there is tenderness just above or below the knee. If the teeth have erupted, the gums become swollen and bleed easily. Black and blue spots may appear on the skin, and legs and thighs may become swollen and the whole body be sensitive to touch. There is usually some fever.

At the first signs of this disease the child should be taken to a physician. The cure is to correct the diet. Fresh fruit or vegetable juice, such as orange juice or tomato juice, is usually added to the diet. Only a physician can tell the amounts needed.

The best treatment of scurvy is to prevent it. Every child needs sunlight, fresh air, fresh fruit and vegetables. Babies often need to be fed orange juice or tomato juice in order that they may have an adequate amount of the important Vitamin C which prevents and cures scurvy. Every baby should be taken regularly to a physician or clinic to make sure that it is being fed the right food.

SEASICKNESS

Seasickness is thought to be due to a disturbance of the normal balance of the body. The symptoms are too familiar to require enumeration. A person who is subject to seasickness can sometimes avoid trouble, or at least lessen it, by taking a dose of castor oil before going aboard ship, by eating lightly on shipboard, especially of liquid foods, and by lying quietly in a deck chair as much as possible.

An attack can sometimes be relieved by holding ice in the mouth, drinking iced ginger ale and placing a hot water bag at the feet and another at the abdomen.

SEWAGE AND SEWAGE DISPOSAL

Thousands of people die yearly simply because of carelessness on the part of individuals or the community in disposing of human excreta, or sewage. A good many years ago a severe epidemic of typhoid broke out in Plymouth, Pennsylvania. Out of a population of 8,000, over 1,000 came down with the disease and 114 died. The epidemic was traced back to one person who had the disease and whose excreta had been thrown within a few feet of the edge of a high bank sloping down to the stream which supplied the town with water. This is an illustration of a great many unfortunate instances of this kind. Hookworm disease could be banished if human excreta were not allowed to pollute the soil near people's dwellings.

In a city or large town the individual householder can turn over the problem to the municipal government. The drains of his house are connected with sewer pipes which carry all the sewage of the city away. Where this sewage is carried to is a problem that may affect the health of thousands. The sewage from any large community is sure to contain disease bacteria. If it is deposited in a river or lake, people may drink the water or bathe in it and thus become infected. Often it is emptied into the ocean. Epidemics of typhoid have been traced to the eating of oysters or other shell fish that have been infected by sewage. Fortunately methods have been perfected for purifying sewage so that it cannot *pollute* the water it enters. By the use of filters and chemicals, sewage may be completely purified.

One of the questions one should ask when moving to a town or city is—

“How is the sewage disposed of?”

In the country or in a small town the carelessness of one person may endanger the lives of people for miles around. First of all every householder whose premises are not connected with a sewer must see to it that his toilet or privy is fly proof, that it is not placed near a well or any other source of drinking water and that it is kept free from odor by the use of disinfectants or by the dry earth method. (See *Privies* and *Flies*.) He should see to it that the excreta are finally deposited where there is no possibility of spreading infection. If deposited on the soil as fertilizer, care should be taken lest it be near enough to a stream or lake for the excreta to be washed into it. Also the excreta should be covered over with a layer of soil so as to inhibit fly breeding. When a water toilet is used in the country it should be connected with a cess-pool or septic tank built by one who has expert knowledge of sanitary engineering, or with the supervision and advice of the health authorities.

SHELLFISH

(See *Marketing for Safe Food* and *Typhoid Fever*.)

“SHELL-SHOCK”

(See *Mental Hygiene*.)

SHINGLES

Shingles is a disease of the nerves that frequently attacks old people. It also occurs among children and young adults, but is rare among middle-aged people. The disease is usually most severe when it attacks an old person. The first symptom is fever, followed by a localized eruption of small blisters about the size of a pea. The skin becomes

very much inflamed around these blisters, and the flesh is red, hot and puffy. This eruption may appear on any portion of the body, but appears most frequently on the abdomen, on the chest, face or arms. It follows the course of the nerves affected. When shingles attacks the face it may cause partial paralysis of the face and inflammation of the eyes. An acute attack usually lasts from three to six weeks, but the disease may be prolonged for months and years among the old and feeble.

The exact cause of shingles is not known. It is probably of infectious origin. The occurrence of the disease is usually a sign of a run-down, fatigued condition, especially of the nervous system.

The person having shingles should stay quietly in bed. The bowels must be kept open with mild doses of castor oil or salts, and the diet should be very light. The eruption requires careful dressing every day with an antiseptic and soothing lotion, great care being necessary not to break the blisters. A physician should always be consulted.

SHOCK

(See *Accidents* and *Apoplexy*.)

SHOES

(See *Clothing*.)

SINUS INFECTION

(See *Focal Infections*.)

SKIN, Care of

(See *Bathing* and *Cosmetics*.)

SLEEP

Sleep gives the body an opportunity to slacken all its functions. The heart beats more slowly. Breathing is less

rapid. The muscles are relaxed. The glands lessen their secretions. Digestion slows down. The brain is less active. It is the time for growth and recharging of the body's energy. The body cannot do its work well if it is continually being cheated out of its due amount of sleep. Experiments have shown that acute insanity may be brought on by the exhaustion due to loss of sleep.

The intensity of present-day life causes both adults and children to need more than ever adequate rest for physical and mental recuperation. The child who stays up till his parents go to bed, who is taken to the movies and allowed to go to parties at night, is laying the foundation for nervous disorders in later life. He is being cheated. The highly-organized social life that many high school students indulge in may have serious effects on the nervous system, especially in the case of boys and girls who have inherited a "highstrung" temperament or are under par physically. Parents and teachers should coöperate to regulate the social life of students so as to prevent the strain on mind and body that inevitably results from frequent late parties during the school week.

The following table showing the hours of sleep required by children of different ages is offered by Williams: *

<i>Age</i>	<i>Hours of Sleep</i>	<i>Time in Bed</i>
5-6	13	6 P.M. to 7 A.M.
6-8	12	7 P.M. to 7 A.M.
8-10	11½	7.30 P.M. to 7 A.M.
10-12	11	8 P.M. to 7 A.M.
12-14	10½	8.30 P.M. to 7 A.M.
14-16	10	9 P.M. to 7 A.M.
16-18	9½	9.30 P.M. to 7 A.M.

Most adults need the traditional eight hours of sleep in order to keep fit. Some people can get along with less sleep

* "Healthful Living," by Jesse Feiring Williams.

and feel no ill effects, but they are exceptional. A person who is run-down or exceptionally highstrung may need nine hours or more. The following are some important conditions of restful sleep:

1. Quiet surroundings. Experiments have shown that even when a person is not awakened by noises the refreshing quality of sleep is impaired.

2. Plenty of cool fresh air in the sleeping room. At least one window should be opened winter and summer. Most restful of all is sleep taken out of doors.

3. No hearty meal within several hours of retiring.

4. Not too soft a bed.

5. A mind relaxed and free from worry.

(See *Insomnia*.)

SLEEPING SICKNESS

True sleeping sickness is a disease of tropical countries. It was formerly limited to tropical Africa, but has been found occasionally in other countries. The disease is caused by a parasite, which is transmitted by a kind of fly called the Tsetse fly. If a case of sleeping sickness is brought to a locality where the Tsetse fly is common, it spreads rapidly. Wherever this fly is absent, sleeping sickness never spreads.

Symptoms of this disease are: fever, enlargement of the glands on the back of the neck and gradually of the glands over the entire body, a rash consisting of small blisters, swelling of the eyes, face and the ankles and gradually increasing drowsiness.

Prevention of sleeping sickness depends upon isolating the patient, protecting both sick and well from the bite

of the Tsetse fly, and destruction of these flies. The extermination of this fly is a difficult task, since the larvæ remain in the body of the female fly until they are fully developed and then are dropped on moist soil into which they burrow until they are ready to fly. Control has been accomplished to a certain extent by clearing the brush, and exposing to the sun the moist earth where the young flies are developing, causing them to die.

Others advocate the extermination of big game, in the hope that in this way they will destroy the food of the fly. The main source or reservoir of infection is evidently in wild animals. It is believed that the gradual progress of agriculture and stock raising will result in destroying the breeding places of the Tsetse fly and reduce the centers of wild game infection.

Few cases of true sleeping sickness ever recover. There is no preventive medicinal treatment.

SLEEPLESSNESS

(See *Insomnia*.)

SLEEP WALKING

(See *Mental Habits of Childhood*.)

SLING, HOW TO MAKE

(See *Broken Bones*.)

SMALLPOX AND VACCINATION

Smallpox is one of the most dreaded of all diseases. This is because it is extremely infectious, frequently fatal and usually disfigures the skin with deep scars or pock marks. Before the discovery of vaccination it was a great scourge

that swept over towns and cities killing people in large numbers and leaving a never-to-be-forgotten mark on many of those who survived.

The usual symptoms are chills, fever, headache, vomiting and sometimes delirium and convulsions. A severe eruption appears on the whole body. The sores, or pox, are usually most numerous on the face and hands. When the eruption is particularly severe, it may result in blindness. The disease lasts about twelve days.

Smallpox has ceased to be the terrible menace to life it used to be in this country simply because vaccination is generally practiced. In countries or sections of countries where this simple preventive measure is not taken it still is one of the main causes of death, as for example in China, India and Russia. The results of strict enforcement of vaccination are shown by comparing figures. In Boston, Massachusetts, in the year 1752 there were 5,998 cases out of a population of 15,684. In 1923, with a population of over 700,000, Boston had only 6 cases of the disease.

Vaccination consists of rubbing under the outer skin through a small scratch a drop of fluid secured from a cow or calf which has had cow pox. If the vaccination "takes," the place where the vaccine was introduced grows red in a few days and a small sore forms which is completely healed within three weeks from the time of vaccination. A person may feel slightly feverish or have a headache, but usually the only unpleasant feeling is the sore spot. A successful vaccination protects a person from the disease for from five to seven years.

Every baby should be vaccinated during its first year; another vaccination should be performed during a child's early school days.

Some people are afraid of vaccination, thinking it dangerous. This is a mistaken idea. Vaccination, when performed by a reliable physician, is not dangerous. Formerly there was the possible danger that the vaccine might contain some infection. For this reason the production and sale of vaccine has, since 1902, been under the strict control of the Federal government. The establishments are regularly inspected to see that the calves used in producing vaccine are perfectly healthy and the vaccine is tested for purity and strength from time to time in the United States Hygienic Laboratory at Washington.

We hear comparatively little about smallpox now, in most parts of North America, simply because vaccination is so general. In some of the Central and Western states, where vaccination has been less thoroughly carried out, there are several hundred deaths yearly. People who neglect being vaccinated are dangerous citizens. Their presence in a community in any numbers may cause a severe outbreak of the dreaded disease at any time. Smallpox would be banished from the world if everyone understood the importance of vaccination.

SNAKEBITE

An instant's delay in treating snakebite is a life and death matter. The wound should be laid bare at once by cutting clothing, if necessary, and the limb tied immediately between the wound and the heart, a tourniquet being used as described under *Bleeding*. Unless medical aid is near, the following measures should be taken to save the patient's life without waiting for the arrival of a physician:

With a small clean penknife, which has been held in a flame if possible, enlarge the wound, causing it to bleed

freely. If you have no cracks or sores in your mouth, or on your lips, suck the wound. Then cauterize the wound thoroughly with some carbolic or nitric acid on a match stick or with a heated nail or wire. After the tourniquet has been on for fifteen or twenty minutes, it must be loosened so that the limb will not die from lack of blood. After one minute it should be tightened up again for twenty minutes, after which it is again loosened for two minutes. This is kept up for several hours, so that only a small quantity of the snake poison in the limb can get into the general circulation at one time.

SOAPS

Soaps play a part in sanitation and disease prevention. They are mildly germicidal, some more so than others. Soaps advertised as medicated or antiseptic are not necessarily valuable as disinfectants. The disinfecting chemical may be too weak to kill germs in the short time of contact between the soap and the infected material.

The main service rendered by soap is to loosen up and emulsify possibly germ-laden dirt and grease. The germs are thus washed away and mechanically removed; hence the value of repeatedly rinsing out the soap with warm water. When possible, rub the bar of soap directly on the object to be cleaned. This insures making a strong soap solution where needed. The hotter the water used, the more efficient and powerful is the action of the soap. Boil things in soapy water, if possible.

Washing the body with soap removes oily secretions and activates the skin and its glands. This is important, because a portion of the body excretions pass through the skin. "Green soap" is a potash or soft soap, made from

vegetable oil, and often used by doctors and nurses as a hand soap. To get good results, the hands should be scrubbed for several minutes.

A strong solution of laundry soap is useful in cleaning up a sickroom after illness. It may be made by dissolving the soap in hot soft water, in the proportion of one-half a pound to five quarts of water. Hot water, soap and sunlight are usually the best disinfectants to use in a room after most contagious diseases.

Soap should be used plentifully in washing hands, in washing dishes, in laundering clothes. Children should be taught early always to wash their hands with soap and water before touching food and after using the toilet.

SORE THROAT

(See *Colds* and *Tonsils*.)

SPINAL CURVATURE

Curved spines are deplorably common among school children. It has been estimated that "possibly one-fourth of the children of this country have this condition to a greater or less extent." There are two chief kinds of spinal curvature; the one from front to back resulting in round shoulders and hollow back, the other from side to side, called lateral curvature. Poor posture in standing and sitting and the habit of carrying books under one arm to and from school are common causes of both types of curvature. Lateral curvature is also caused by infantile paralysis.

A curvature which is due to poor posture can be partially or completely corrected in youth by exercises and by removing the causes. (See *Posture*.)

SPINAL MENINGITIS

(See *Cerebrospinal Fever*.)

SPRAINS AND STRAINS

A sprained joint is usually due to a sudden turn or a pull. No bones are broken or out of place, but the cords which attach the muscles to the bones are torn. There is severe pain in the joint, increased by motion, and there may be much swelling and discoloration. A physician should be sent for immediately to determine the seriousness of the injury. While awaiting his coming, the following measures will give relief:

Raise the injured joint so that it will get less blood. Apply cloths wrung out of very cold water changing them frequently. Prevent motion of the joint. If the injury is of the lower limb, the patient should not be allowed to walk.

A strain is like a sprain, but it is the muscle instead of the cords which is injured. Rest and light massage (rubbing the limb upward toward the body) will give relief. When pain subsides, deeper and firmer massage may be used.

SPRINGS

(See *Water*.)

STAMMERING AND STUTTERING

A defect of speech is one of the most serious handicaps a person can have in life. One who grows up a stammerer or a stutterer is under a great disadvantage in almost any profession or business as well as in social life. Parents and teachers should never neglect to work patiently and

sympathetically to correct and help the child who suffers from these difficulties.

Stammering and stuttering are considered by some authorities as two different disorders. According to this classification, stammering is a difficulty in enunciation due to a defect in the organs of speech, or to bad speech habits. Lipping is a form of stammering. Sometimes the tongue is bound to the floor of the mouth by a strip of membrane and thus cannot be placed in positions necessary for forming certain words or certain letters. In this case the cure is a very simple operation. Most other cases can be prevented or cured by patient training in enunciation during childhood.

Stuttering is a hesitating speech interrupted by spasms which make articulation difficult. It is a disorder of the nervous system, a nervous and mental hurry, and is more common among children of nervous parents. Dr. Greene, Director of the National Hospital for Speech Disorders in New York City, has found through studying several thousand cases of stutterers among children that the parents are usually rapid, jerky talkers. Hence the prevention of stuttering begins with the mental habits and speech habits of fathers and mothers. A serious fright sometimes brings on the habit. An example is a girl who has stuttered ever since she narrowly escaped being run over by a train.

The stuttering child is usually a highly sensitive type, very emotional. He needs the same kind of treatment as the child who suffers from other nerve disorders—calm surroundings, a quiet, normal life and plenty of outdoor play with other children. Parents must be particularly careful to avoid frightening such a child or forcing him into disagreeable situations. It is not good for him to be the

center of attention in the family, nor should his difficulty be talked about. Under no conditions should he be laughed at when he stutters. He needs to be encouraged by precept and example to keep calm and to talk slowly.

The longer the stuttering habit continues, the harder it is to cure. Many believe that when the habit becomes established and continues until the child is five years old, special treatment is necessary. It is a mistake to let the trouble go in the hope that a child will grow out of it.

Many useless, quack cures and courses of training for stuttering are advertised. They may be generally regarded as devices for getting the money of the stutterer.

The essential points in treatment are enumerated by Dr. Meyer Solomon as:

- "1. Convincing the individual that he can get well.
- "2. The desire on the part of the individual to be cured.
- "3. The patient must be willing to work for his cure.
- "4. We must establish self-confidence in him.
- "5. Everything necessary to improve his physical, nervous and mental poise should be done.
- "6. The nature of his trouble, along the lines indicated above, should be clearly pointed out to him, if he is old enough to understand.
- "7. We must endeavor to overcome his general tendency to hurry and rush, especially during speech.
- "8. Slow speech should be insisted upon.
- "9. He should, when in oral spasm, always open his mouth quickly for the vowel following an initial consonant; close his mouth when he finds himself unable to leave a vowel; relax his respiratory apparatus, or breathe calmly

or slowly, or begin over again when he finds himself in a state of respiratory spasm.

"10. In some cases special exercises to increase visual or auditory imagery during speech may be helpful by compelling the patient to speak more slowly, and to live more fully in what he is saying, thus producing a state of calmness and poise.

"11. In the same way, special exercises for different parts of the speech apparatus, especially vocal gymnastics, may be used with the object of giving the patient greater faith in himself, and in developing a fuller and more resonant voice."

Special classes in school for speech defectives are now being strongly advocated by students of speech disorders. Frequently the condition is merely a symptom of a more fundamental abnormality and one which only the mental hygienist or psychiatrist can analyze and cure.

STARCHY FOODS

(See *Diet.*)

STIES

A common disorder of the eye is an infection and inflammation of one of the glands of the eyelid. It may be caused by an infection due to rubbing the eyes when the hands are dirty, going bathing in contaminated water, etc. Eyestrain is thought to be a factor. Sties are not serious, but should be looked after carefully and not touched with anything that has not been sterilized.

Recovery is hastened by having a physician open the sty with a sterilized needle and remove the pus. Great care should be taken after a sty has been opened to avoid

infecting it in any way. Applications of hot boracic acid are helpful in relieving the inflammation.

STOMACH-ACHE

(See *Indigestion.*)

STUPES

(See *Home Nursing.*)

SUMMER COMPLAINT

(See *Diarrhea.*)

SUN-BATHS

(See *Sunlight.*)

SUNBURN

(See *Burns.*)

SUNLIGHT

Men were created to live in the sunlight. From earliest times, primitive people have worshipped the sun as a god and looked to it as a source of health and life. The cave man tried to find the cave that faced the path of the sun. The ancient Greeks knew the value of sun baths, and wealthy Romans built in their palaces sun rooms or solaria, where they could bask in the warmth of the sun's rays. Even the animals know the worth of sunlight. It is always a sunny spot that the cat or dog chooses for his nap.

During the last quarter of the century the effects of the sun on the body have been carefully studied, and it has been discovered that certain diseases can be prevented and cured by exposure to the sun. The healing power of the sun's rays was first used for the cure of disease by Dr.

Rollier of Switzerland in treating the kind of tuberculosis that attacks the glands of the neck, the bones and joints. His results were so much better than those which had been obtained in any other way, that the whole subject of sunlight as a cure of disease was studied.

Sun baths have proved of value in relieving congestion of the internal organs, in increasing the red blood cells, in lowering blood pressure, in stimulating sluggish kidneys to better action, in healing infected wounds and in preventing and curing rickets. Strangely enough, sunlight acts like a specific medicine in this last-named widespread disease of childhood. The exposure to the sun should be carried out in the early forenoon and late afternoon, in order to avoid the depressing effect of the heat rays of mid-day. (See *Rickets*.) Many cases of skin disease disappear under the influence of the sun's rays and the free air. People who are tired and run down often gain increased physical and mental energy from this the easiest kind of bath one can take—a bath in the open air and sunlight.

The immediate effect of exposing the body directly to the air and sunlight is to increase the fuel-burning powers of the body. This causes breathing to become deeper and makes the blood circulate through the body faster, thus turning over waste products more promptly to the organs that eliminate them.

Healthful as sunlight is, it is possible for a person to get too much of it. Too sudden and too prolonged exposure to sunlight may cause not only painful but serious results. The first sunbath of the season should last only a few minutes. As the skin becomes accustomed to the sun, the length of the bath can be gradually increased.

Realization of the healing and strength-giving powers of the sun makes one understand how important it is for people to have plenty of sunlight in their homes. Every house should have at least one sunny room, better yet a sun porch. (See *Housing*.) The child who lives in a house without sunlight may be likened to the white sickly-looking grass one sometimes finds imprisoned under a board or a stone. To grow strong, children must have sunlight to live in and sunlight to play in.

SUNSTROKE AND HEAT EXHAUSTION

A person who has been exposed to great heat, either from the sun's rays or in a hot room, may be affected in either of the following ways, which require opposite treatment.

1. The face is flushed. The patient may be delirious. There may be vomiting or convulsions. Breathing appears difficult. This is called *sunstroke* or *heatstroke*. The person often falls into a deep unconsciousness and may die before help can be given.

A physician should be sent for at once. While waiting for him the following relief measures should be taken:

Remove patient to a cool, shady place. Loosen tight clothing. Sponge face and chest with cold or iced water. If possible, put him in a cold bath or apply ice cap to head.

2. The face is pale and cold. The patient feels weak and may faint. His pulse is weak and rapid. This is called *heat exhaustion*.

Stimulating treatment should be given as follows:

Hold some strong ammonia near the nose. Give a teaspoonful of hot coffee or half teaspoonful of aromatic spirits of ammonia in a little water. Rub the skin. Place hot

water bottles at the feet and cover the body with blankets. If patient does not recover rapidly, send for a physician.

SYPHILIS

Syphilis has been rightly termed the third great plague. It is an extremely dangerous, highly contagious, treacherous disease which requires months or years for a cure. Syphilis has been called the great canker of humanity. It is ranked by Osler as coming third or fourth among the "killing diseases." Worse than death may be some of the complications or consequences of syphilis, such as general paralysis, locomotor ataxia and insanity. Syphilitic insanity is responsible for over 14 per cent of all men admitted for the first time to insane hospitals, according to Rosenau. Even more serious than the effects of syphilis on the individual are the effects on the race through heredity. Feeble-mindedness, idiocy, insanity and other mental afflictions, also deformity of bones, involvement of sight and hearing are frequently the tragic heritage of a child of syphilitic parents. There is not a tissue in the human body which syphilis does not attack.

Syphilis is caused by a germ which enters the blood through a break in the skin or mucous membrane. The first symptom is a sore at the point of infection, which usually appears in from ten days to three weeks after exposure. If the infection is promptly and thoroughly treated at this stage a cure can be expected, although when the diagnosis can be made from the sore the infection is already in the blood. Syphilis is the most versatile of all diseases, and there is not a disease entity which it cannot and does not mimic. It has been called the great imitator.

The disease is spread chiefly through sex relations, but may be acquired by kissing a person who is infected or by using articles such as towels, drinking cups, handkerchiefs, bed clothing, razors, pipes, etc., which have become contaminated.

Syphilis is curable in *its early stages*, but long and careful treatment by a reliable physician is necessary, and this treatment must be continued until the physician pronounces the patient cured.

The following advice to a syphilitic patient is quoted from a bulletin issued by the Division of Social Hygiene of the Illinois State Department of Health.

"Consult a good doctor immediately and follow his directions until he pronounces you cured.

"Do not be discouraged if your doctor tells you it may take three or even four years to cure you. He knows. He has treated many cases.

"Stay away from advertising doctors (quacks).

"Don't use 'blood' or patent medicines.

"Make getting well your principal business in life.

"Alcoholic liquors in any form must not be taken.

"Do not smoke or chew tobacco. The sores in your mouth will be worse if you do.

"For the same reason, avoid sour, acid, peppery and spicy foods and pickles.

"Brush your teeth and wash your mouth every night and morning.

"*Allow no one else to use your tooth brush.*

"Have a dentist treat your teeth if they are bad. Be sure to tell him you have syphilis so that he can protect himself and others against your disease.

"*Do not spread the disease.*

"To protect your family, friends and fellow workers obey the following rules:

"Always sleep alone.

"Always use your own toilet articles—towels, brushes, combs, shaving kit, soap, etc.

"Always keep for your own use any article which has been in your mouth such as tooth brushes, toothpicks, pencils, pipes, cigars, cigarettes, forks, spoons, cups, etc.

"Always avoid kissing any one—especially children.

"Sexual intercourse must not be had during the first year or during any outbreak of the disease, or at any time until your physician has pronounced it safe.

"Always burn dressings which have been in contact with open sores and always wash your hands thoroughly after handling such dressings.

"If you are married, or expect to be, remember you can infect your mate and your unborn children.

"Nothing is gained by changing from one doctor to another. If you do make such a change, be sure you continue in the hands of an honest and competent physician. Do not be deceived by claims of advertisers to cure in a short time. Do not stop treatment until your doctor has determined by repeated blood tests and physical examinations that you are cured of your infection.

"No one who has ever had syphilis should contemplate marriage or having children until a competent physician has determined by blood and other tests and physical examinations that it is safe to do so."

Most state departments of health are ready to advise people as to how to secure proper treatment for syphilis and how to keep from contracting it. Many of the larger cities and towns have clinics where treatment is given free

of charge or for a small fee. The American Social Hygiene Association at 370 Seventh Avenue, New York City, is also ready to give advice about the treatment and prevention of this disease. Quack remedies for syphilis are legion. Patent medicines should never be used without medical advice, and under no conditions should one consult an unknown physician who advertises cures in newspapers, in magazines or by mail.

Because of its contagiousness and because of its inherited effects, syphilis is a public health problem which should command the united efforts of all health agencies and other agencies for social betterment. It has been difficult to fight this disease because, until very recently, the public was unwilling to face the facts and to use the publicity necessary to campaign against it. The United States Public Health Service likens this attitude to the tactics of an ostrich, which will hide its head in the sand when an enemy pursues it. This attitude was changed during the World War. At that time it was necessary to wage a vigorous campaign against syphilis and gonorrhea in order to maintain the health of the fighting forces in this country and abroad. This campaign aroused a large number of people to a realization of the ever-present danger of these diseases and has led to organized efforts to educate the great mass of people to a knowledge of how to avoid this danger.

The measures most necessary to the control of syphilis are enforcement of laws against prostitution, isolation of feeble-minded, compulsory reporting of the disease to the Board of Health, education in regard to prevention and cure, strict enforcement of laws to suppress quacks, education of young people in the proper understanding of sex and the provision

of wholesome and properly regulated recreation for young people. (See *Recreation* and *Venereal Disease Clinics*.)

TACHYCARDIA

(See *Heart*.)

TAPEWORM

(See *Worms*.)

TEA AND COFFEE

No general rule can be laid down regarding the use of tea and coffee, except that they should never be taken by children. Persons who are inclined to nervous disorders or have weak digestions do well to avoid them. For many people tea and coffee in moderation produce no ill effects, and may be beneficial. For others they are over-stimulating and upsetting to digestion. They may do harm to anyone if used as a whip to keep mind and body active when they need rest.

TEETH

The National Museum at Washington exhibits a row of over 200 skulls of Indians who lived between 200 and 300 years ago. Only one tooth in the entire collection of skulls shows dental decay. Contrast this with the recent study made in West Virginia of 7,059 children in whose teeth 16,151 cavities were found, exclusive of those cavities that had been filled. On good authority it may be stated that to-day 18 to 22 per cent of first permanent molars are lost by the time students reach high school and that 48 per cent of the people between 30 and 40 years of age have lost the first permanent molars.

One reason why the Indians had teeth so much better

than those of civilized men may be that they ate food very different from the food we eat to-day. They were not fed soft foods that required little work by the teeth, but had to grind and tear dried meat and fibrous roots. They had little or no sweets. They ate roots and berries and herbs that gave them the minerals their teeth needed and enabled them to preserve their teeth throughout their lives.

Physicians are agreed that the kind of food one eats, especially in childhood, and before the teeth erupt has much to do with the health and formation of the teeth. Hard, dry toast and zwieback are excellent foods to give the teeth exercise. Coarse foods, like graham bread and coarse cereals, are good for the teeth. Much candy may cause the teeth to decay by creating fermentation in the mouth.

There are two minerals that the teeth of a growing child must have to be healthy—calcium and phosphorus. Calcium is found in large quantities in green vegetables and milk; phosphorus in green vegetables, fresh fish, cottage cheese and several other foods.

The building of healthy teeth begins six months before the baby is born. A child is often doomed to have teeth that are soft and decay easily because his mother neglected to eat the right food before his birth. (See *Pre-Natal Care*.)

The shape of the jaw has much to do with the appearance and health of the teeth. If the jaw grows out of shape or lacks full development, the teeth will be irregular and crowded. A defect of this kind can often be easily corrected if the child is taken to a dentist soon after the first teeth appear. Neglected adenoids are a frequent cause of a badly-shaped jaw. The sucking of pacifiers or the thumb by a baby seriously affects the shape of the jaw.

The care of the teeth should begin as soon as the first

set appears. Many mothers make the mistake of thinking that, since the first teeth are temporary, it is not necessary to take care of them. This may cause much trouble later on. If the temporary teeth are lost too early, the jaws do not develop naturally and the permanent teeth will not have sufficient room. The child will then have crowded and irregular teeth. If the baby teeth do not come out at their proper time, the permanent teeth cannot take their proper place. Decaying teeth in the child's mouth have a bad effect on his general health. Regular visits to the dentist or to a dental clinic (once in six months if possible) should begin in babyhood. Strict attention to keeping the teeth and mouth clean should also begin in babyhood. If there are small openings in the grinding surfaces of the teeth, have them attended to at once. Brushing cannot keep these small openings clean. The following suggestions for caring for a child's teeth are given by Baker.*

"As soon as the first teeth appear, they should be washed after each feeding. For this purpose a soft linen cloth or piece of absorbent cotton should be wound around the little finger of the mother or nurse. This should be dipped in a solution of soda bicarbonate (baking soda), one teaspoonful to a pint of water. The mouth does not need to be washed out, but the teeth should be cleansed carefully. From the time the child is two years old, a soft tooth brush should be used for this purpose. By the time the child is three years old, it should be able to use the tooth brush itself. The teeth should be washed night and morning, and, if possible, after the noonday meal."

Pre-natal care and care on the part of the mother can

*"Healthy Children," by S. Josephine Baker.

easily be undone in later life if a person does not make and keep the habit of taking care of his teeth.

The following rules for the daily care of the teeth are recommended by Williams: *

"1. Brush the teeth daily, preferably after each meal. Use a rather stiff brush with uneven bristles and thoroughly cleanse all surfaces of the teeth. A rotary across and up-and-down motion are the proper movements to make. Never neglect the night brushing. This is the most important single brushing.

"2. One should have three tooth brushes, to be used alternately. This will give time for the bristles to thoroughly dry out.

"3. Use a paste or powder that is not scratchy.

"4. Food particles between the teeth should be removed with dental floss. Care should be taken not to injure the gums.

"5. An alkaline mouth wash is useful before retiring, although not essential if the mouth is in good condition. Lime water made from coarse unslaked lime may be used.

"6. Cleansing of the tongue with a tooth brush used only for this purpose assists in the removal of decomposing material that at times causes foulness of breath.

"7. Examination of the teeth by a good dentist every six months, preferably every three months, is strongly advised. Attention to this matter will prevent many defects from occurring. If evidence of dental defect develops, immediate attention should be given to it."

Care should be taken not to use the teeth for cracking nuts or breaking anything hard, since the enamel may be cracked in this way.

* "Personal Hygiene Applied," by Jesse Feiring Williams.

There are many good pastes and powders made which a dentist or clinic will recommend. One can make an excellent powder as follows:

Peroxide of magnesia.....	60 parts
Perborate of soda.....	30 parts
Pulverized soap.....	10 parts

Mix thoroughly in 200-mesh sieve and flavor with winter-green or some other flavor. (Formula of Dr. Joseph Head.)

Many serious illnesses may result from decayed teeth and dirty mouths, such as rheumatism, neuritis, neuralgia, headache, heart trouble, abscess, skin troubles, colds, boils and nervousness. Lambert reported in 1920 that of one thousand cases of rheumatism treated at Bellevue Hospital in New York City 68 per cent showed bad teeth. In the city of Bridgeport, Connecticut, where a five-year program of dental hygiene was carried on in the schools, the general health and mental alertness of the children were so improved that the cost of special classes for backward children was reduced from 40 per cent to 17 per cent. Infected teeth are one of the most frequent causes of sinus infection. (See *Focal Infection*.)

Frequently the teeth are apparently sound and yet are infected at the roots. For this reason it is wise when the general health is affected, especially if one has neuralgia, neuritis or rheumatism, to ask the dentist if the teeth should be X-rayed. An X-ray picture will reveal by little dark spots the presence of root abscesses or disturbances. Neglect of infected teeth may cause serious heart trouble. (See *Heart*.)

Normal gums are like normal skin. Inflamed gums are open gateways for infection to get into the system.

Pyorrhea or Riggs Disease. Most of us are familiar with the dangers of pyorrhea through the startling advertisements displayed by manufacturers of certain tooth pastes and powders. This is a disease which infects the gums. If neglected, it causes the teeth to fall out and is likely to poison the whole system. A competent dentist can detect the first warning signs of pyorrhea and prevent it from making headway. Gums which bleed easily should always receive the attention of the dentist, since this is one of the warnings.

TEMPERATURE OF ROOMS

(See *Ventilation*.)

TETANUS

(See *Lockjaw*.)

THYROID

(See *Glands and Glandular Therapy* and *Goiter*.)

TIREDNESS

(See *Fatigue*.)

TOBACCO

All forms of tobacco, whether cigars, cigarettes, pipe tobacco or snuff contain a certain amount of nicotine, a substance known to be a poison. So strong a poison is pure nicotine that one drop on the skin of a rabbit will produce death. The extent to which tobacco poisons the human system is a matter of disagreement. The habitual heavy use of it often causes a disordered condition of the heart (an ailment so common among tobacco users that it is known as "tobacco heart"), irritation of the throat called "smoker's

sore throat," indigestion and unsteadiness of the nerves. Like tea and coffee, tobacco seems to produce more marked affects on some people than on others. It is generally agreed that tobacco interferes with the growth of young people and tends to dull mental and physical alertness in the young. For this reason the athlete is never allowed to smoke during training periods. Williams * says:

"The youth who looks forward to excellence in athletics, to achievement in business or the professions, to authority and control in store and factory, will select his habits as carefully as his friends, his food as carefully as his facts, and he will leave tobacco out of the things that are for him."

Various statistical studies made on students of schools and colleges would seem to indicate that physical development, clear thinking and high scholarship are handicapped by the use of tobacco.

On adults, tobacco produces less marked effects. But the person who wishes to keep himself at his highest point of efficiency will limit himself to at least very moderate use of a drug so powerful when concentrated and so likely to disturb the harmonious working of the body.

TONICS

(See "*Patent*" *Medicines and Quack Cures.*)

TONSILS

The tonsils are situated on either side of the back of the throat. In some cases they may be so large as to project noticeably into the throat, in other cases they are very small and almost embedded in the surrounding tissues. The

* "Healthful Living," by Jesse Feiring Williams.

use to the body of these structures is not known. Some think that they act as watch dogs to intercept germs that enter the body through the nose and mouth and prevent them from passing down the throat. In any case, it is certain that the tonsils come in contact with many germs, since one is constantly taking in germs through the nose and mouth. The tonsils are thus being continuously battered against by the enemies of the body, and it is small wonder that they frequently become infected with disease themselves. This cannot happen, however, as long as the tonsils remain healthy but only when the tissue loses its resistance.

It is impossible for a person to tell for himself whether or not his tonsils are healthy. A diseased tonsil may not be large, it may not be sore, it may be very quiet and inconspicuous and yet have concealed a little pocket of pus that is gradually leaking into the blood and poisoning the system. If the infection is slight or of not very long standing it may be felt only as a general tired feeling, lack of "pep." More serious infections may cause heart trouble, rheumatism and diseases of the kidneys. Frequently infected tonsils affect the glands of the neck causing them to become swollen and diseased, especially in children.

A child should be regularly examined for any abnormal condition of the tonsils, since his whole development will be affected if a diseased condition is not promptly attended to. Persistent rheumatic or neuralgic pains should be a signal for having a doctor examine the tonsils at any age.

The only satisfactory treatment ordinarily for diseased tonsils is to have them removed.

Tonsillitis is an acute inflammation of the tonsils caused by a germ. The tonsils become swollen and red, and frequently there are white patches in the throat. A physician

should always be consulted promptly, since sometimes diphtheria is confused with tonsillitis.

TONSILLITIS

(See *Tonsils*.)

TOOTHACHE

A toothache is a sign that the hard part of the tooth has decayed, leaving the nerve exposed. If it is not treated, the destruction of the tooth will continue, the tooth and its nerve will die, and the tooth may become a hiding place for germs which may poison the whole body. A drop of oil of cloves on a bit of cotton in the aching cavity may give temporary relief from pain, but will not cure the decayed tooth. Do not delay seeing a dentist.

TOURNIQUET

(See *Bleeding*.)

TOWELS, Common

(See *Eyes* and *Bathing*.)

TOXINS

(See *Focal Infection*.)

TRACHOMA

(See *Eyes*.)

TRICHINOSIS

The history of a case of trichinosis reminds one of the rhyme of "The House that Jack Built." Trichinosis is caused by a worm which infects rats; rats become infected by eating each other or the infected offal about slaughter

houses. Hogs become infected with this worm in the same way by eating rats or infected offal, and the cycle is completed when human beings eat underdone pork or sausage.

The adult worm inhabits the intestines and discharges its eggs into them. The embryos are carried by the blood stream to all parts of the body, and develop into worms, which attach themselves to the muscles. The first stage of the disease occurs while the worms are in the intestines; pain in the intestines and diarrhea are symptoms of this stage. In the second stage, violent muscular pains are felt, and great weakness. The disease is frequently fatal and is often mistaken for rheumatism or typhoid fever.

The prevention of this disease can be accomplished in two ways. Thorough cooking of all pork and sausage will protect one from the effects of eating meat which is infected with these worms. Primarily, the most desirable method of preventing trichinosis is through exterminating rats about slaughter houses and careful supervision of the methods of feeding hogs for market. Storage of pork products, at a temperature of 5 degrees Fahrenheit for 20 days or longer, will kill the larvæ.

TUBERCULOSIS or CONSUMPTION

Rest, fresh air, and good food are a certain cure for tuberculosis in the great majority of cases, if the disease is discovered in time. They are also a sure preventive. Yet about 100,000 people die of this disease every year in the United States and it has come to be called the "white plague."

Tuberculosis is a germ disease and cannot be inherited,

The germ usually enters the body through the nose and throat and most frequently lodges in the lungs. Sometimes it attacks the glands of the neck, the throat, the bowels and other organs as well as the bones and joints. There are many ways that one can be exposed to this disease. One may receive the germ directly from a consumptive who, when he coughs or sneezes, fills the air about him with germs. One may pick up the germs on hands or clothing from the dried sputum that a careless consumptive has spit about him. One may eat the meat of a cow that has tuberculosis or drink milk from a cow that has this disease. The germ of tuberculosis is so common that nearly everyone is exposed to it at some time in his life. A person who is living a healthy life and is not "rundown," as we say, rarely knows that a tuberculosis germ has entered his body. The favorite victims for the disease are children who have malnutrition, men and women who work indoors for long hours and do not offset their work with outdoor exercise, mothers who are so busy taking care of their families that they have no time to take care of themselves and men who work in certain dusty trades.

Some of the signs of tuberculosis are: a persistent cough which does not get better with treatment, a slight fever every afternoon over a period of time, marked loss of weight, spitting blood and a constant tired feeling. Anyone with these symptoms should go to a physician or a clinic for examination immediately.

Complete cure is almost always possible in the early stages of consumption. It is, however, a slow process. Medicines are of little use in treating this disease. Patent consumption cures are not only useless but often harmful. There is only one method of bringing about recovery, and that

is to build up the strength of the patient so that the body will resist and gradually destroy the germ. The chief means of accomplishing this are three—life in the open air, nourishing food and *rest*.

Special hospitals, called sanatoria, have been built for the treatment of the tuberculous. These offer the best opportunity for rapid recovery that a patient can have. He is also taught habits of living that he can continue in his own home after sanatorium treatment is no longer necessary.

Formerly only the rich could afford sanatorium treatment. This has been changed since the establishment of state and local sanatoria which offer treatment for a reasonable charge, or free of charge in needy cases. In every state in the Union there is an association for prevention of tuberculosis. This organization, as well as the official health authorities, is always ready to give information about state sanatoria and to arrange for patients to receive treatment there.

If sanatorium treatment is impossible, there is no reason why a patient cannot be treated at home if economic conditions permit it, if the doctor's orders are followed strictly, if the patient is not worried over family affairs and if the rest of the family be protected from the disease. A person who has consumption will not endanger other members of the family, if the following precautions are followed in caring for him:

Have the patient sleep in a room by himself and keep the windows of his room open day and night. Wash thoroughly and boil the sheets and body linen of the patient. Keep the dishes used by the patient separate from those used by the rest of the family and boil them. Have the patient use paper handkerchiefs, spit into a pasteboard

sputum cup and cover the mouth every time he coughs. Burn sputum cups every day.

The germ of tuberculosis is very persistent and watchful. It is always ready to attack a weak spot in the body. The soft tissues of the lungs are its favorite resting place, but these organs are by no means the only part of the body the germs can injure. In children, tuberculosis often attacks the glands of the neck. A child who has sore and swollen glands should be kept out of doors and should be under a physician's care. The swelling may be caused by an infection from a tooth or from tonsils or adenoids. But it may also be tuberculosis.

Tuberculosis of the spine is known as Pott's disease. This form of the disease occurs principally among children. It may result from an injury to the spine, which causes the germs of tuberculosis already in the body to center there. Pott's disease is often fatal and frequently leaves the patient deformed or paralyzed. Children suffering from it are apt to walk on their toes or support themselves by holding on to chairs as they walk and to try in every way to keep from jarring the spine. When the lower part of the spine is affected, the child may complain of pain in the stomach or bowels.

Tuberculosis may also attack the joints, especially the joints of the knee and the hip. A patient suffering from tuberculosis of the spine or the joints should be under the care of an orthopedic physician; that is, a physician who has made a special study of the structure of the body and the diseases which attack the joints and bones.

The abdominal cavity of the body is lined with a tissue called the peritoneum. A chronic inflammation of this tissue

(chronic peritonitis) is another one of the many forms tuberculosis may take. (See *Peritonitis*.)

Tuberculosis should not exist among enlightened people, since prevention is largely a matter of right living. The fact that so many die of it in the United States every year means that a large percentage of the people of this country either through ignorance or poverty are living below the safety line. They are either overtaxing their strength, going without proper food, or working at some trade that is injuring their health. The only sense in which the disease can be inherited is by inheriting a weak body, and a weak body can be made strong. Among the preventive measures that are saving lives are the open-air schools or open-air classes in regular schools, and the nutrition camps and nutrition classes, that many cities have for children who are undernourished or threatened with tuberculosis. Many cases of this disease would be prevented if states would pass, or enforce existing, regulations of industry. It is difficult for a person to have lungs healthy enough to resist disease if he works where he is continually breathing in certain types of injurious dust. Especially is there need for more education and stricter laws in regard to the spitting evil. The person who spits on street cars and sidewalks may be more dangerous to society than the most desperate gunman.

Finally, it is fundamental to find the disease early. A regular, annual health examination, by the family physician, or at a clinic, at school or in the factory, is a vitally important measure to this end. (See *Malnutrition, Medical Examination, National Tuberculosis Association, Open Air Schools and Working Conditions Injurious to Health*.)

TUMORS

The word tumor means "a swelling." As used by physicians it refers to an abnormal lump or growth of tissue in any part of the body. There are two kinds of tumors. The one kind may grow to an enormous size without damaging the rest of the body, except by pressure. The other in course of time can somehow eat into the tissues surrounding it and destroy them. The first kind is known as "benign," the second as "malignant." Cancers are of the second type.

A tumor should always receive the prompt attention of a physician. The benign tumor may cause great discomfort if neglected, and may interfere with the proper working of the body by pressing on some organ. A malignant tumor, if not discovered early and properly treated, is certain to be fatal.

TYPHOID FEVER

Typhoid fever is primarily an intestinal infection. The germ thrives mainly in the intestinal tract of humans and is acquired only by ingestion of infected excreta from either cases or carriers. It is one of the diseases that can be banished, if everyone will coöperate in fighting it. It occurs in places where people are careless about sewage disposal and about keeping the water supply and the milk supply free from infection. It does not thrive in a town that is willing to spend money to protect its citizens and has an active and efficient health administration.

The disease is preventable in two ways: by stopping the spread of the germ and by vaccination. Typhoid is now rarer in the United States army than in the most healthful

cities and towns. This is because all the soldiers in the army are vaccinated. If a person plans to travel in countries or spend his vacation in a resort, where sanitation is neglected, he should certainly be vaccinated against this disease. It is a wise precaution for anyone to take. Even in a city that takes every preventive measure, the disease may occasionally break out, due to carriers, or it may be brought there by an outsider.

There are many ways in which a person may take typhoid. He may drink water or milk infected with typhoid germs. He may eat raw oysters or raw vegetables which have been infected. A fly from the room of a typhoid patient may crawl over his food. Sometimes people who are apparently healthy carry the germs of typhoid in their bodies and are thus spreaders of the disease. Most of the typhoid carriers have had the disease in the past and continue to give off the germs in their urine or bowel discharges. Unwashed hands touching food eaten by others complete the journey of the germ from the carrier to the exposed person. Of course in every large group of people there are a certain number of carriers who may be responsible for new cases at any time.

The symptoms of typhoid are loss of appetite, coated tongue, intense headache, nausea, diarrhea, and severe aching of the back and legs. Often the patient has nosebleed and often chills followed by sweating. The temperature usually rises approximately one degree daily during the first week of the disease. In severe cases the patient is delirious. As the disease progresses the abdomen may become swollen from peritonitis (inflammation of the lining of the abdominal cavity), the lungs may become congested and there is bleeding from the intestines.

If the patient is cared for at home he must be isolated from the rest of the family. The dishes used in the sick-room should be kept separate and should be disinfected after each meal by being boiled. The person who takes care of the patient should never come in contact with the food for other members of the family and should always wash her hands in a disinfectant when leaving the sick-room. The room should be carefully screened so that flies may not enter it. Everything which comes in contact with the patient must be disinfected. Special care should be taken always to treat the intestinal discharges with a disinfectant before disposing of them.

Recovery from a severe attack of typhoid depends on constant good nursing. The patient should be under the care of a physician, should be kept in bed and should have the constant attention of someone who understands nursing. A liquid diet is essential. Cold water treatment and ice bags are generally used to keep down the fever.

An attack of typhoid may be so mild that the patient is able to be about the house. In such a case, the same precautions should be taken to isolate the patient and to prevent the spread of infection as in severe cases. A typhoid patient should never be allowed to mingle with other people or to touch food intended for others until a physician has made a microscopic examination of his discharges and declared them free from the germs of the disease. (See *Sewage Disposal, Water Supplies, Milk*, etc.)

TYPHUS FEVER

This disease is carried by the body louse. Prevention is a matter of keeping free from these pests. It was one of the great pestilences of the middle ages, killing off the soldiers

of Napoleon's army by the thousands during the retreat from Moscow.

In contrast to the experience of Napoleon's army is the experience of the American forces during the World War. Although the soldiers were in countries where typhus was common, the disease was kept under control by the sanitary department of the army by means of "delousing" stations for men returning from the front. In 1921 an epidemic of typhus broke out in Russia. This might have swept over Europe like the pestilences of the Middle Ages, if people had not known the cause of the disease and had not marshalled their health forces to set up quarantine stations, disinfecting plants and hospitals.

Body lice, like head lice, are evidence of lack of cleanliness in one's mode of living. A person of cleanly habits may, however, become infested through contact with another person who has lice. To rid the body of lice the skin should be scrubbed with a lather of soap in hot water followed, if convenient, by a mixture of one third part gasoline to two thirds part vaseline. The clothing should be sterilized by steaming or boiling. For head lice the hair may be soaked in a mixture of equal parts vinegar and kerosene and then washed in hot soapy lather and combed with a fine toothed comb to remove the eggs or nits.

The first symptoms of typhus resemble those of typhoid, except that the onset is more abrupt. There is a high fever from the beginning. On the third to fifth day a rash appears and the skin takes on a mottled appearance, which has given the disease the name of "spotted fever."

The first step necessary in the care of a typhus patient is to see that any lice or lice eggs on his body or clothing

are killed. The method just described should be followed. The bodies and clothing of persons who have lived with the patient should be treated in the same manner. The physician and nurse need to take special precautions to prevent being bitten by lice. They should wear rubber gloves and completely cover their bodies with gowns and their hair with caps when near the patient. (See *Health Officers*, and *United States Public Health Service*, and *Vermin*.)

ULCERS

An ulcer is a slow-healing sore. It is usually a symptom of some other disorder or a result of injury. For example, an ulcerated tooth is a decayed tooth or a dead tooth. An ulcer in the stomach or intestine may be due to chronic indigestion, to an injury or to a diseased condition in other organs. Ulcers often result from varicose veins. They may appear on almost any part of the body in the late stages of syphilis.

An ulcer should never be neglected, since it may be a symptom of serious disorder and since a neglected ulcer may lead to cancer.

UNCONSCIOUSNESS

Unconsciousness may be due to various causes, to injury to the head, to bleeding severely, to heat exhaustion, to fainting, to electric shock. When a person is found unconscious, a physician should be summoned at once. While awaiting his arrival, try to discover the cause of the trouble and give relief. If the patient's face is white, the head should be placed lower than the rest of the body. If the face is red, the head should be elevated.

UNDERWEIGHT

(See *Diet.*)

UNITED STATES CHILDREN'S BUREAU

(See *Children's Bureau.*)

UNITED STATES PUBLIC HEALTH SERVICE

The United States Public Health Service is a bureau in the Treasury Department in direct charge of the Surgeon General.

The duties of the bureau are:

1. Protection of the United States from the introduction of disease from without.
2. Prevention of the interstate spread of disease and the suppression of epidemics.
3. Coöperation with state and local boards of health in health matters.
4. Investigation of diseases of man.
5. Supervision and control of biological products.
6. Public health education and dissemination of health information.

Some examples of the achievements of the Public Health Service are in brief as follows: smallpox eradicated in the Philippines; supervision and control of cholera in the Philippines; bubonic plague controlled on the Pacific coast by the destruction of rats and ground squirrels; bubonic plague controlled in New Orleans and Porto Rico by the eradication of rats; cholera successfully prevented from reaching the United States without interruption of commerce, in the great European epidemic of 1910, through new quarantine procedure developed by the Service. During the

World War the Public Health Service successfully protected the health of the military forces of the United States through work in the areas contiguous to the camps. Without such control the camps would have been menaced to an unprecedented extent by such diseases as malaria, typhoid fever, cerebrospinal meningitis and venereal diseases.

In its investigations the Public Health Service has made important contributions to the prevention and control of various diseases, among which may be mentioned: yellow fever, cholera, pellagra, beriberi, leprosy, malaria, syphilis, diphtheria, trachoma, typhus, deer fly fever, measles and hookworm. Other studies have been made of immunity from disease, ground squirrels and plague, purification of polluted oysters, fumigation against rats and vermin, stream pollution, improvement of milk supplies, organization of state health departments, and hospital service.

The work is carried on by means of the following divisions:

1. The Division of Marine Hospitals and Relief furnishes hospital and dispensary treatment to federal beneficiaries as prescribed by law, such as patients of the Coast Guard, Merchant Marine, etc. This division is operating 25 hospitals having a bed capacity of approximately 3,830.

2. The Division of Domestic Quarantine includes in its work measures for the suppression of plague and other epidemic diseases; treatment of cases of trachoma in hospital and field clinics for the purpose of suppressing that disease; demonstration work in rural sanitation; control of water supplies used by interstate carriers; prevention of epidemics, by assisting in building up and improving divisions of communicable diseases and sanitary engineering in state health departments.

3. The Division of Foreign and Insular Quarantine supervises the administration of 104 maritime and border quarantine stations in the United States and its possessions, and is responsible for the proper enforcement of the United States quarantine laws and regulations; supervises the operation and medical inspection of aliens at the various ports of entry in the United States, which exceed 90 in number; and directs the operations of medical officers assigned to American consulates for the purpose of enforcing the United States quarantine laws applicable at foreign ports of departure. The observance of International Sanitary Agreements is also one of the functions of this division.

4. The Division of Personnel and Accounts provides professional, scientific and other personnel for the execution of the various activities of the Service.

5. The Division of Sanitary Reports and Statistics collects and publishes information regarding the prevalence and geographic distribution of diseases dangerous to public health in the United States and foreign countries. Court decisions, laws, regulations, and ordinances pertaining to the public are compiled, digested and published.

6. The Section on Public Health Education prepares technical literature for medical and lay periodicals, including newspapers; prepares and delivers, by radio broadcast, lectures through an increasing number of broadcasting stations, many of these lectures being reproduced in the columns of the daily newspapers; through this radio service supplies health information to foreign language newspapers; produces motion picture films, and supervises the use and distribution of a stereopticon loan library.

7. The Division of Scientific Research conducts scientific field and laboratory studies of diseases of man and

other public health problems. In addition to these studies, this division has supervision of the manufacture and sale of viruses, serums, toxins and analogous products, including arsphenamine, and neoarsphenamine, in interstate traffic.

8. The Division of Venereal Diseases promotes the co-ordination of state boards of health in venereal disease control; prepares educational material; and stimulates the improvement and standardization of methods of diagnosis, treatment and control of venereal diseases.

VACATIONS

It is a very common experience for a person to have to recuperate from a vacation. Though he went away for a rest he comes back, to his amazement, much more tired than when he left. Doctors are always prepared for a whole crop of after-vacation illnesses. Diarrhea, typhoid, hives and indigestion in various forms are the more frequent of the ills that attend a vacation unwisely spent. Vacation after-effects may be due to many different causes. Some of the commonest are these:

Over-eating.

Too little exercise or too much exercise following a too inactive life in the city.

An infected milk supply.

An infected water supply.

The wise vacationist plans for his vacation carefully. First of all he chooses his place and plans what he shall do with an eye to getting a complete change from the life he leads through the year. If his work keeps him driving about in a car, he is foolish to spend his vacation on a motor tour. On the other hand, the man who is doing

heavy manual labor or anything that keeps him physically active, will do well to take his vacation in his car. A person who throughout the year is meeting large numbers of people either in business or socially should choose a quiet resort, while the person who leads a quiet life throughout the year should go to a resort where there are plenty of parties.

A frequent mistake made by office workers and professional men and women is to rest too thoroughly. They think they are so tired that they must have complete rest. So they are tired, but it is often the kind of tiredness that is best rested by swimming, climbing mountains, sailing boats and the like.

On the other hand, it is disastrous for a person who exercises little throughout the year to start in his vacation too strenuously. He should begin with a three- or four-mile instead of a twelve-mile walk, with one set of tennis a day instead of three.

Much tiredness and illness after vacation could be avoided, if people would realize that the laws of health cannot be set aside for two or three weeks without unfortunate results. Going without sleep night after night, overeating at meals and constant eating between meals, disregard for proper diet, unsanitary surroundings, impure milk and contaminated water may more than undo all that outdoor air and freedom from worry and responsibility may accomplish. (See *Camps, Flies, Garbage, Milk, Poison Ivy, Privies, Recreation, Sewage and Water.*)

VACCINATION

(See *Asthma, Diphtheria, Hay Fever, Scarlet Fever, Smallpox and Typhoid.*)

VACUUM CLEANERS

(See *Home Hygiene*.)

VALVULAR DISEASE OF THE HEART

(See *Heart*.)

VARICOSE VEINS

Varicose veins are enlarged veins. They may usually be recognized by their knotted purplish appearance. They are caused by the blood being dammed up in certain parts of the veins instead of circulating freely through the body. Those most likely to suffer from this disorder are people who stand constantly at their work, people who have weak hearts or tissues so weakened by disease as to give little support to the walls of the veins, people who are overweight. This condition occurs most often in the lower part of the legs. Relief can sometimes be secured by wearing a bandage over the diseased veins. A physician should always be consulted.

Those with a tendency to varicose veins who are engaged in occupations requiring long hours of standing should elevate the legs every evening and massage gently from the foot to the hip. This can be done while lying in bed and will relieve the congestion of the lower limbs.

VEGETABLES

(See *Diet*.)

VEGETARIANISM

(See *Diet*.)

VENEREAL DISEASE

(See *Gonorrhea* and *Syphilis*.)

VENEREAL DISEASE CLINICS

The development of venereal disease clinics was greatly stimulated during the World War by the attention health officials gave to the problem of controlling these diseases. At this time hundreds of thousands of examinations of men for war service were made, and the need for increased facilities for the treatment of persons infected with gonorrhea and syphilis was shown. In 1918 a Division of Venereal Diseases of the United States Public Health Service was created by an act of Congress, and over four million dollars was appropriated for allotment to the states to campaign against gonorrhea and syphilis. Stimulated by Federal action, 47 of the 48 state boards of health established divisions of venereal diseases. To-day all the states excepting one have this service. There are more than 800 clinics for the expert care and treatment of syphilis and gonorrhea in the United States. They are to be found in every large city and in nearly every city of over 30,000. Treatment is furnished either free or at a small cost.

These clinics are rendering a valuable service in helping to check the spread of gonorrhea and syphilis by providing free advice and treatment for those unable to pay for expert treatment and guidance. They also serve as centers for the dissemination of information regarding gonorrhea and syphilis and in this manner protect the thoughtless person from seeking advice at the hands of a quack or other incompetent practitioner.

Any one suffering from gonorrhea or syphilis can secure information regarding the location of clinics from the state or city board of health or from the United States Public Health Service or the American Social Hygiene Association.

VENTILATION

Over-heated, poorly-ventilated houses and public buildings are responsible for an enormous percentage of the sickness that occurs during the winter months. Most of our American houses are over-heated with abnormally dry air in the winter time. When a person spends most of his time in air that is too warm and too dry his skin is apt to become abnormally sensitive to cold, so that he is chilled when he feels a draft of cold air or goes out of doors.

The essentials of good ventilation are an even, moderate temperature, moisture in the air and circulation of air. A room should never be heated to above 70° Fahrenheit. The ideal temperature for a room in winter is 68° . Tests made in the winter time of the air in a steam-heated office in Topeka, Kansas, showed an average of 23 per cent humidity, while the outside temperature averaged 82 per cent humidity. An unfortunate effect of too dry air is to evaporate the moisture from the body so fast that a person may be chilly in a room that is sufficiently warm. Hence, much of the tendency to keep rooms over-heated.

Some method must be used to restore the moisture to the burnt-out atmosphere of furnace-heated buildings. In private homes and small public halls this may be done by opening windows and airing out frequently or by keeping windows open an inch or two. Plenty of outdoor air will make up for the effects of the furnace. It is unfortunate that so few people know how to ventilate a room by opening the windows. A form of warfare usually takes place "where two or more are gathered together" indoors in the winter.

There are the hardy ones who cannot get enough outdoor air, and there are the over-sensitive who are afraid of a draft the minute they see an open window. The room becomes over-heated, and one of the hardy members of the group throws wide a window or two. The sensitive at once protest and the windows are closed. All this friction and discomfort can be avoided if some one will see to it that all the windows are open an inch or so instead of throwing one or two open noticeably, or if window boards are used to prevent a direct draft.

Incidentally, people who are sensitive to drafts should strengthen their resistance to cold by taking cold baths and by not "coddling" themselves. Another valuable procedure for offices, schools, etc., is to open all windows at regular intervals and have every one move about or take some simple form of exercise.

It is very important that the air in a room should be kept moving. This may be accomplished by opening windows on opposite sides of the room or by opening a window both at the top and the bottom.

Formerly it was thought that the chief function of ventilation was to remove the carbon dioxide given off by the body in breathing and to supply oxygen. On this theory most of our public buildings have been ventilated in the past. Extensive tests have disproved this theory and have established the primary importance of temperature, humidity and movement in determining the value of any system of ventilation.

Modern life in artificially heated, air-tight houses makes sleeping with open windows one of the first essentials of healthy living. The old superstition that night air is dangerous has no foundation in fact.

VERMIN

Certain insects and small animals are not only annoying to human beings but actually endanger health by carrying the germs of diseases. The dreaded typhus, for example, is transmitted to man by the body louse and possibly by the head louse. Fleas of rats and squirrels carry bubonic plague. Fleas have been proved to carry tapeworm larvæ. Fleas and bedbugs have been accused of playing a rôle in transmitting infantile paralysis, leprosy and tuberculosis, but this has not been proved. Roaches feed upon all kinds of food and travel through drain pipes from cellar to attic of a house and from one apartment to another. They thus have the best opportunity in the world to carry infection.

The most effectual method of preventing vermin from breeding is strict cleanliness. The body or scalp that is unwashed is apt to be a breeding place for lice. Cockroaches infest kitchens and bathrooms that are not kept clean and feed on animal matter and food of all kinds. Bedbugs like dusty bedsteads and dirty mattresses. The commonest source of fleas are cats and dogs. It does not follow, however, that every one who has a pet dog or cat needs to have a house infested with fleas. The use of flea soaps and insect powders will keep down fleas and the regular beating and frequent washing of a cushion or rug reserved for the use of a dog or cat will help prevent fleas from spreading over the house. Tacked down carpets encourage fleas much more than do rugs that can be taken up frequently and beaten. When a house has become infested with fleas, it can be cleared by the use of flake naphthalene. Five pounds of these flakes should be scattered on the floor of a room and the room should be closed for twenty-four hours.

The innocent suffer for the guilty very frequently in the case of bedbugs. No matter how fastidiously clean one may be, he may pick up a bedbug on a street car, on a boat or in the berth of a sleeper. He may have some sent home with his laundry or, if he lives in an apartment house, may have visiting bedbugs from another apartment. While there are excuses for having bedbugs, there is no excuse for keeping them. When there are only a few they can usually be exterminated by squirting kerosene or gasoline into cracks and corners of beds and other furniture. The corners and crevices around the buttons of mattresses are especially likely to be hiding places. When a house or room is completely infested thorough fumigation may be necessary.

There are several varieties of lice, including those that infest the body, the "cooties" of war days, and those that infest the scalp. They lay their eggs in the hairy portions of the body or in the hair of the head or in the clothing and live by sucking the blood of their victim. Body lice are not common in this country, but among school children in our large cities head lice are so common that even a well-cared-for child may be visited by them. When a child is continually scratching his head it is well to examine his hair and scalp closely. If the lice are allowed to remain, the itching and scratching may cause an inflammation like eczema. The first thing to do is to rid the scalp of the live lice. This may be done by soaking the hair and scalp thoroughly with a mixture of equal parts of kerosene and sweet oil at night, binding the head with a towel and leaving it overnight. In the morning the hair and scalp should be washed with hot water and soap. The eggs, or nits, as they are called, look a little like small flakes of dandruff. These often prove difficult to remove, as they are literally glued

to the hair. Persistent combing with a fine-toothed comb dipped in vinegar is usually effectual, but treatments on several successive days may be necessary.

Roaches can be starved out if the kitchen and pantry are kept free from crumbs, if all food is kept covered, if the sink is kept clean and dry and wet brushes and dishcloths are not left lying about. It is well to place alum or borax in the waterpan under the refrigerator and to sprinkle roach powder under the refrigerator. (See *Bubonic Plague, Flies, Typhus* and *Rats*.)

VISITING NURSE

(See *Nurse, Public Health*.)

VITAMINS

(See *Diet*.)

WASHING DISHES

(See *Home Hygiene*.)

WATER

Plenty of pure water to drink and to bathe in is a first essential to health. "Where does the water come from?" is one of the questions a person should always ask when choosing a place in which to live or even to make a short stay.

Pure water has been one of the foundations of civilization from earliest times. The Assyrians piped water long distances to Nineveh. Hippocrates, one of the famous Greek philosophers, was advocating the boiling of drinking water some four hundred years before Christ. Among the ruins left standing of early Roman civilization, conspicuous are

the aqueducts that brought water from the hills to Rome.

Many of the terrific plagues of the Middle Ages were due to carelessness in regard to drinking water. Seven hundred cases of cholera were said to be the record of one well in London.

It is impossible to tell from the looks or taste of water whether or not it is pure. In case of uncertainty about drinking water a sample should be sent to a board of health laboratory for examination.

The greatest danger from carelessness regarding drinking water is that it may be polluted with discharges from the human body. Diseases that are carried in this way are typhoid, cholera, diarrhea and dysentery.

A deep well is one of the safest sources of water, provided no impurities can drain into it from the surface of the ground. This can be prevented by providing the well with a heavy top to which the pump frame is tightly bolted and by enclosing the top by means of a cement platform.

A shallow well is easily polluted by surface impurities. Such a well should never be located near a privy or stable and should be protected by having the upper part of the shaft lined with concrete. It is never safe to use a shallow well in a thickly-populated community.

Cistern water should not be used for drinking, bathing or dishwashing unless one can be perfectly sure that the surface on which the water is collected is free from impurities and the cistern is kept covered and protected from surface drainage. Open cisterns have frequently been breeding grounds for malarial and yellow fever mosquitoes.

A spring is a source of pure water if it is inclosed in a water-tight chamber so that surface impurities cannot be washed into it and so that it cannot be polluted by people

or animals using it. It is wise to dig a ditch around a spring to carry off surface water.

In limestone regions it is difficult to protect shallow wells and springs from surface impurities, and the water should always be viewed with suspicion.

Water from lakes, ponds and streams may be contaminated in many ways. Winslow * states that "no surface supply is absolutely safe, unless effective safeguards have been supplied in the way of some purification process." Almost every lake city, according to Rosenau,† has at one time or another suffered from outbreaks of typhoid fever.

Surface water may be made safe for use by cities in the following different ways:

First, by storing it in large reservoirs and not using until bacteriological examination has shown it to be free from bacteria.

Second, by passing it slowly through a bed of sand (a filter) from four to six feet deep. For waters from clay soil it is sometimes necessary to reënforce the sand filter by adding a chemical which forms a heavy precipitate on the sand.

Third, by disinfecting with a powerful chemical. Hypochlorite of lime or chlorin gas is generally used.

The city of Chicago built a drainage canal at a cost of \$40,000,000 to protect the lake water from sewage contamination. In spite of this precaution the water supply is all disinfected.

It is often an expensive process to make safe the water supply for a large city, but in the end it saves the city more than it costs. For example, in Lawrence, Massachu-

* "Man and the Microbe," by C. E. A. Winslow.

† "Preventive Hygiene and Medicine," by Milton J. Rosenau.

setts, it has been estimated that the reduction of typhoid fever by means of purifying the water supply represents a saving of over ten dollars per capita.

Few people in cities realize what constant vigilance is necessary to insure pure water and how much they owe to a conscientious health department. Large storage reservoirs are built and carefully guarded from contamination. Aëration systems are installed to spray the water into the air and remove any stale taste from storage. In addition to every precaution to prevent contamination, sand filters and chlorine treatment are used.

When it is impossible to secure pure water the housewife can protect herself and her family by boiling all water used for drinking and dishwashing, or by chlorinating it. For this purpose calcium hypochlorite may be purchased in one-gram glass containers at camping outfit stores and drugstores. One gram is sufficient for thirty-six gallons of water.

Ice is far less likely to carry active disease germs than is water. However, cases of typhoid have occasionally been traced to this source. It is, therefore, wise to investigate the source of the ice one buys. It is, of course, highly important to wash all ice before using, since the surface may become infected again and again in the handling.

Water may be sold in bottles and labeled "Mountain Spring Water" or "Sparkling Silver Spring Water" or any other alluring name and yet be impure. Sometimes spring waters are bottled under highly unsanitary conditions. The only way to be sure that any particular brand of spring water is pure is to have it examined by the board of health. (See *Home Hygiene*, *Rural Hygiene* and *Typhoid*.)

WAX IN THE EAR

(See *Ear*.)

WEIGHT FOR HEIGHT TABLES

(See *Diet* and *Malnutrition*.)

WELLS

(See *Water*.)

WHOOPIING COUGH

Whooping cough is a highly contagious and dangerous disease. It is communicated to others by coughing and by the discharges of the nose and throat. The disease starts with a slight cold, running at the nose, fever and a dry cough. The eyes are bloodshot. After a week the cough gets worse, and the child coughs many times in succession. He becomes pale and draws in his breath with a sharp scraping sound, or whoop, and frequently vomits because of the hard coughing. As a result many children lose weight and become very weak. In this condition they may more easily get tuberculosis, pneumonia or other serious diseases.

When a child shows the first signs of whooping cough a physician should be called. He should have smaller meals than usual—4 or 5 times a day—consisting of easily digested food. Every time he loses his meal he should be given an egg beaten up in milk. This drink can be made attractive by adding a little sugar and vanilla. A child who has whooping cough needs plenty of fresh air. Unless it is stormy, he should be taken out every day on the roof, in the yard or into the park. It is essential to keep the sickroom well aired night and day. All matter that comes from the mouth and nose while the child is sick should be

received in a piece of clean old linen, cotton or paper napkin and burnt. The glasses, plates and spoons which the child uses while he is sick must be kept separate from those used by the rest of the family. He should not be allowed to mingle with others until the physician says he is well. It has been wisely suggested that every child who goes outdoors with whooping cough should wear an arm band of white or yellow ribbon on which "whooping cough" is printed. This will warn the parents or nurses of other children.

Whooping cough is particularly dangerous for a young baby. It is often dangerous and sometimes fatal to grown people. Recently a vaccine has been used in preventing and treating this disease, but not with very encouraging results.

WORKING CONDITIONS INJURIOUS TO HEALTH

A foundation for good health is healthful work. Unfortunately modern industry, with its specialized tasks, its dust and poisonous chemicals, may be a source of much disease. Workmen's compensation commissioners in several states are agreed that in many instances tuberculosis of the lungs can be considered as an effect of hazardous industries. An abnormally high percentage of chronic heart disease is found among workers in foundries, blacksmiths, miners, lead workers and others who wield heavy sledges or carry heavy burdens, as an indirect effect of these occupations. Rupture (inguinal hernia)* is common among workers who are obliged to lift weights or to press foot presses, such as workers in the building trades and workers

* Workers should realize that rupture needs care and the attention of a physician. It is dangerous to wear a truss that has not been fitted by a physician.

on foot power machines. Other injuries that may be caused by certain occupations are:

Spinal curvature, sometimes caused by continued faulty posture at work, especially when the worker is young. (Kober and Hayhurst report that a "large percentage of young persons engaged in workshops, factories or even at the writing desk develop lateral curvature of the spine.")

Flat feet, from prolonged standing. Common among nurses, policemen and others who stand continually at their work.

Varicose veins, also sometimes brought on by continued standing.

Eye injuries from metal or stone particles.

Eyestrain from constant close work, usually combined with poor lighting. Common among garment workers.

Injury to eardrum among caisson and other workers.

Probably the most common and most widely-distributed enemy to the health of the worker is dust. A large number of the processes of modern industry involve exposure to dust of various sorts. Injury to the lung tissue is likely to result to workers who continuously breathe air heavily laden with certain dusts over a long period. Examples of occupations in which dusts are apt to be extremely unhealthful, unless preventive measures are taken, include sand blasting, granite cutting, etc.

Particularly injurious to health are dusts which consist of hard, sharp-edged particles, such as emery dusts, or the silica found in granite working. Other workers exposed to less injurious organic dusts are found in the woolen and paper industries, felt hat factories, cement and flour mills, etc.

"Miners' Lung," or anthracosis, is a condition of the

lungs due to absorption of coal dust through inhalation in large quantities. Coal miners who work in mines where dust removal and ventilation are inadequate are likely to suffer from this condition. In some instances the lungs may become black from coal dust and remain healthy. Often the tissues become inflamed and fibrous, lose their elasticity and afford a receptive breeding ground for the germs of bronchitis, pneumonia and tuberculosis.

In certain industries workers may be subjected to poisoning through absorbing poisonous chemicals. Lead, arsenic, mercury, phosphorus, carbon monoxide, anilin, benzine and wood alcohol are substances of this type which endanger health in industry.

In addition to dusts and poisonous substances, certain kinds of work do injury to the worker by overstraining some portion of his body. Performing one movement with one group of muscles hundreds or thousands of times in a day is unnatural and likely to cause discomfort to the worker. The discomfort is all the more serious if the action is performed in a strained position due to faulty posture at workbench or machine.

Work may be healthful in itself and yet be injurious to health because of the surroundings in which it is performed. It may be performed in an atmosphere that is excessively hot, as in foundries and steel mills, or excessively cold, as in cold storage plants, in an over-moist atmosphere, as in some of the processes of textile industries or in nerve-racking noise. The lighting of the plant may be so bad that the workers are constantly straining their eyes. The washrooms and toilets may be so unsanitary as to cause serious discomfort, even if not a communicable disease hazard. An example of work that is unhealthful because of

unhealthful surroundings is the manufacture of cordage and twine, cited by Kober and Hayhurst.* "In this industry many women are frequently employed without adequate protection from the steam, heat and wet of the spinning rooms, where ventilation is poor and where spray and drippings frequently wet their clothing up to the waist and where pools of water gathered on the floors often compel them to go barefoot. Among such workers colds, rheumatism, bronchitis and menstrual troubles are prevalent."

There are probably no illnesses so definitely preventable as occupational disease. There is no cause of ill health theoretically more certainly removable than unhealthful working conditions. Usually the dusts of industry can be kept down by exhausts and sprinklers. When these are not wholly adequate, workers can protect themselves by wearing respirators. Most of the strains workers suffer are unnecessary. Benches and machinery can usually be adjusted so as to prevent a strained position. When one motion must be performed over and over again, variety of work can be introduced to allow change of position. Workers can be protected from poisonous substances in several ways—by exhausts which remove dusts or fumes, by the workers wearing respirators or wearing gloves when the substance is handled. The harmful effects of heat can be alleviated by deflectors and by fans. Where the worker must face excessive heat, he can protect himself by wearing an asbestos mask. Bad lighting is inexcusable in any establishment. The worker can, however, protect himself to a certain extent against eyestrain by wearing eyeshades. When injury to the eyes is threatened by flying particles, goggles should be worn. The hazards of working in a damp

* "Industrial Health," by George M. Kober and Emory R. Hayhurst.

place, such as the twine factory previously described, can be greatly lessened if the floors are properly drained, if ventilating devices are used to carry off the steamy air, and if workers have dry rooms to keep their clothes and change before going out of doors.

Long hours are often in themselves a serious health hazard, especially when the work is monotonous. At present, the eight-hour day and the forty-four-hour week are considered by industrial workers as a standard that all industries should adopt.

Three things are necessary to bring about adequate protection of the health of workers:

1. Realization on the part of employers generally that it is to their own interest to conserve the health of employees in every way possible.
2. Realization on the part of workers generally that they should protect themselves in every way possible and that when engaged in dangerous or fatiguing work they should be examined frequently by a doctor.
3. Realization on the part of the public that the health and safety of the workers should be more fully protected by laws.

Already the more enlightened employers are eliminating the wastes of industry. The movement will be general when they realize how well it pays. (See *Lead Poisoning*, *Mercury Poisoning*, *Phosphorus Poisoning*, *Carbon Monoxide Poisoning* and *Health Service in Industry*.)

WORMS

There are certain very annoying parasites that enter the intestines of human beings and multiply there, often causing troublesome symptoms. Among these parasites are round

worms, tapeworms and pin worms. It is not always known how these worms gain entrance to the body, but it is thought that usually the eggs from which they develop are ingested with food that has been eaten raw or without being washed. These parasites, particularly the pin worm, more often attack children than adults.

Round worms are most likely to be present in the lower end of the bowel. They may cause pain in the intestines, diarrhea, nausea and vomiting and other symptoms of disturbed digestion. Sometimes in children they cause convulsions. When a person has these symptoms, it is well to make an examination of the discharges from the bowels to see if worms may be causing the trouble. Round worms are so large that one cannot miss them when present in discharges. Treatment should always be prescribed by a physician.

The tape worm is so called because it looks very much like a strip of white tape. The head is provided with a row of tiny hooks. With these the worms attach themselves to the mucous membrane lining of the intestines, from which they suck nourishment. The presence of these worms in the body usually causes anemia, often to a serious extent. If the trouble is neglected, the patient becomes thin and emaciated, the digestive system is seriously disturbed and there may be severe nervous symptoms. One or a few joined links of the tape worm may be discharged and noted. The treatment for tape worms should always be entrusted to a physician. The disease may be prevented by avoiding eating imperfectly cooked food, unwashed raw food and by never drinking water unless one is sure it is pure.

Pin worms are not uncommon among children, the most noticeable symptom being extreme itching of the rectum.

Other symptoms are loss of appetite, disturbance of bowels, restlessness and irritability. The presence of the worms and their eggs in the discharges from the bowels may easily be detected by a physician. This trouble can usually be treated at home. Baker* suggests that the best method is to give the child a good cathartic, preferably castor oil or calomel, and to cleanse the rectum by irrigating thoroughly once a day with the following solution: One ounce quassia chips boiled for ten minutes in a pint of water, sufficient water being added from time to time to keep the final amount at one pint. The solution should be strained and used while warm. It is essential to keep the rectum and external genitals absolutely clean. Pin worms may be prevented by seeing to it that the child's hands are washed thoroughly before each meal and that food is not eaten until it has been either cooked or made scrupulously clean.

WORRY

(See *Mental Health*.)

X-RAY

The X-Ray differs from an ordinary ray of light in that it can penetrate opaque substances. It was discovered in 1895 by Professor Röntgen of the University of Würzburg, who gave it the name X-Ray (unknown-ray) because its mechanism was a mystery to him.

The X-ray saves thousands of lives every year by enabling doctors to make certain their diagnoses of obscure disorders. One of the first uses to which it was put was in locating foreign bodies, such as bullets. It is now used

* "Healthy Children," by S. Josephine Baker.

to show whether or not an injury involves a broken bone, and whether it has been properly set, to reveal diseased conditions in the joints and in the roots of the teeth and to determine the condition of internal organs, as, for example, in the case of suspected ulcer of the stomach, or in tuberculosis of the lungs.

In addition to being an effective aid to diagnosis, the X-ray is useful in treating certain disorders, among them cancer, syphilitic sores and eczema. (See *Cancer, Tuberculosis, Teeth*.)

YELLOW FEVER

No account of daring explorations, even of air flights to the North Pole, can be more interesting than the history of the conquests of science over the dreaded yellow fever. This disease formerly took a frightful toll of lives in tropical America and even spread as far north as Philadelphia, where a tenth of the population died from it in 1793. From 1800 to 1879 yellow fever visited the United States every year with two exceptions. As late as 1900 it was ravaging the southern ports of this country every year. It was the dread of sailors in southern seas and armies stationed in southern ports, and is thought to have been the disease that played havoc with the second expedition of Columbus in 1495. In Cuba, during the Spanish American War, yellow fever was one of the greatest problems the American army had to face, for the origin of the disease was a complete mystery.

In 1900 a Commission of Army Surgeons sent to Havana, headed by Dr. Walter Reed, set to work to experiment in the hope of definitely ascertaining how this disease was spread. It had been suggested before this time that the germ might be carried by the mosquito. This Commission

undertook to find out whether or not yellow fever was carried in this way. To this end, members of the Commission offered themselves at the risk of their own lives for purposes of experimentation. Three members allowed themselves to be bitten by the *stegomyia* mosquitoes which previously had bitten yellow fever patients. Other members of the Commission exposed themselves to contact with bed clothing and other articles that had come in contact with the yellow fever patient. The three that were bitten by the *stegomyia* mosquito came down with the disease. The hero of this Commission was Dr. Lazear, who, in the process of experimentation, died from yellow fever as a result of being accidentally bitten by a mosquito which carried the germ. In Johns Hopkins Hospital to-day one can see a memorial tablet to this man, inscribed, "With more than the courage of the soldier, he risked and lost his life to show how a fearful pestilence is communicated and how its ravages may be prevented."

The discovery made by Dr. Walter Reed has rendered yellow fever absolutely subject to sanitary control. The prevention of the disease is now simply a matter of preventing the breeding of the yellow fever mosquito. This demonstration of yellow fever control made possible the building of the Panama Canal and has opened up the American tropics to the white race.

The work of the late General Gorgas in the Panama Canal Zone is well known. The measures put through there under his direction resulted in stamping out the disease in a short time and the Isthmus has been free from "Yellow Jack" since 1905. Winslow states that the complete eradication of yellow fever from the earth is now within the bounds of our vision.

NATIONAL HEALTH ORGANIZATIONS (Private)

AMERICAN CHILD HEALTH ASSOCIATION, 370 Seventh Avenue, New York City.

Is actively engaged in preventing disease among children, in reducing the number of infant and child deaths and in spreading knowledge of child hygiene. Its staff of experienced public health workers, nurses and doctors aid state and local health officials to reduce infant mortality, to establish pre-natal clinics, to see that the milk supply is clean and safe, to help the schools in looking after the health of the children and to interest the children themselves in obeying the rules for good health. The Association is well known to children through Cho-Cho, the Health Clown. It is a source of information about the care of infants and children.

AMERICAN HEART ASSOCIATION, 370 Seventh Avenue, New York City.

Gathers facts about diseases of the heart, gives out information as to how these diseases may be prevented and cured and advocates certain standards to make more efficient the care of heart patients through hospital clinics, public school clinics, etc. It is a source of the most recent and reliable information on this subject.

AMERICAN PUBLIC HEALTH ASSOCIATION, 370 Seventh Avenue, New York City.

A source of information concerning the best methods of conducting public health work. It is working to stimulate the public to demand well-qualified public health workers and to build up a corps of trained workers to meet the demand. Its Information Bureau is at the service of any one who wants advice and data relative to any phase of public health.

364 A POPULAR ENCYCLOPEDIA OF HEALTH

THE AMERICAN RED CROSS, Washington, D. C.

Furnishes aid to the sick and wounded of armies in time of war and is the official agency recognized by the Government to aid the sufferers in time of disaster. In addition to this, the organization has an extensive program which includes instruction and the development of interest in first aid and life saving, home hygiene and care of the sick; also a program for family social work or the relief of civilian families in communities where there is no other agency to carry on this work.

The Junior Red Cross represents a chapter activity which is organized within the schools. The aim is to train children in ideals of service; to develop international friendship among children of the world; and to encourage standards of personal and public health.

AMERICAN SOCIAL HYGIENE ASSOCIATION, 370 Seventh Avenue, New York City.

Promotes a better understanding and wiser use of human sex endowments. Stresses sound sex education and works to combat the venereal diseases.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, 370 Seventh Avenue, New York City.

The purpose of this organization is to spread information concerning the symptoms, treatment and prevention of cancer. A carefully prepared set of pamphlets on cancer for the general reader is mailed to any one on request.

NATIONAL COMMITTEE FOR MENTAL HYGIENE, 370 Seventh Avenue, New York City.

Works to reduce and prevent mental and nervous disorders and defects, to bring about the improved care and treatment of those suffering from mental diseases and the special training and supervision of the feeble-minded, and to spread reliable information on these subjects. A source

A POPULAR ENCYCLOPEDIA OF HEALTH 365

of information concerning laws and institutions dealing with the insane and feeble-minded and concerning the best modern methods of treating mental diseases and mental deficiencies. An important part of the Committee's work is to conduct child guidance demonstration clinics.

NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS, INC., 370 Seventh Avenue, New York City.

Exists for the purpose of finding the causes, whether direct or indirect, of blindness and impairment of vision. Its chief aims are to eliminate such causes wherever possible and to act as a clearing house for information concerning the care of the eyes. The organization renders valuable service by cooperating with educational and medical authorities in establishing and improving services relating to eye treatment and in establishing sight-saving classes for children. Equally valuable is its work with safety and illuminating engineers in preventing eye accidents and eye strain in industry.

NATIONAL HEALTH COUNCIL, 370 Seventh Avenue, New York City.

A federation of National health agencies formed for the purpose of coordinating the activities of its members. It maintains a library of approximately 25,000 books and pamphlets on subjects pertaining to health, makes studies of voluntary health work in different parts of the country and serves as a bureau of information on health organizations and their activities.

THE NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING, 370 Seventh Avenue, New York City.

Offers to individuals and groups consultation and advice on public health nursing problems. To those concerned with the education of nurses in public health nursing, it offers help in the study and solution of their problems. It

366 A POPULAR ENCYCLOPEDIA OF HEALTH

attempts to guide the right nurse to the right work. Through its magazine, "The Public Health Nurse," it furnishes those interested in public health nursing with a medium of exchange of information.

NATIONAL TUBERCULOSIS ASSOCIATION, 370 Seventh Avenue, New York City.

Renders valuable service in spreading information regarding the prevention of tuberculosis, in working for higher standards and the increase of facilities for care and treatment, and also in constantly forwarding research into the medical and social phases of tuberculosis. A far-reaching feature of its educational work is its child health education program, especially the Modern Health Crusade conducted in the schools in which over 2,000,000 children are enrolled.

Practically all the work, local, state and national, is financed by the annual sale of Christmas seals.

THE WOMEN'S FOUNDATION FOR HEALTH, INC., 370 Seventh Avenue, New York City.

Aims to create among women a desire for positive health and to assist them in obtaining and maintaining it. Encourages women to have regular physical examinations and to practice health habits. It accomplishes its aims through conducting health examinations, through publishing literature on positive health and establishing contacts with national, state and local leaders in community groups, through conducting local study classes in health education and through demonstrations at state fairs, before local clubs and in colleges and industries.

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